First Dietcare & Research Center
FDRC
You are what you eat

BULLETIN OF FIRST DIETCARE CENTER

Sharing global information on Diet, Food & Nutrition

Articles Published from 1997 to 2003

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Chief Editor
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Foreword

WE ARE WHAT WE EAT.....

Twenty first century has seen us with enormously changed life style where we have become couch potatoes with least exercise, undergone immense food varieties and patterns as well as environmental pollution has loaded us with a large number of deleterious chemicals, electro-magnetic rays and polluted food, air and water. Comparatively easy and comfortable life has pushed us towards a lack in physical movement and we are paying a heavy toll in terms of deep crackdown in our body structure and metabolism. Obesity, hyperglycemia, hypertension, hypercholesterolemia, uremia, gout/ arthritis, piles, fatigue, sciatica pain, nervous breakdown, muscular dystrophy, still birth, caesarian, irregular periods, early menopause, short stature, indigestion, acidity and similar types of disorders are all related to our long hour sitting habits and are heavy toll of our wishful convenience. When we are facing such self-created menaces, another bomb shell has been exploded in terms of Fast/Junk Food attack marketing system of the industrialized countries. The nexus of fat, sugar and salt in the manufacturing of fast food aggravated all above mentioned disorders and vividly added a few additional health rivals like cancers, hepatitis, AIDS and broke our immune system due to lack of certain anti-oxidants, vitamins and trace elements. The situation further exacerbated when food adulteration, low quality food ingredients and unhygienic food processing deteriorated immune system.

Ever since, we are eating variety of food, no doubt, plenty of food. We are growing wiser than our ancestors and more immune to epidemics, which deceased our ancestors in earlier ages.

Major factors behind an increase in average life are research lifesaving drugs as well as more knowledge about good nutrition. Keeping in view the mission of the "Bulletin of First Dietcare" team started endeavors in 1997 publishing magazine in the discipline of food and health by reproducing lot of latest research conducted in industrialized countries of the world, which are well advanced in such disciplines. Being first of its kind monthly "Bulletin of First Dietcare" is carrying authentic food and health information and until now, it is the only magazine which is serving Pakistani community in letter and spirit. This magazine was transformed into various shapes and the editors decided to bind all its 59 issues in a book form which were published between 1997 to 2003.

Table of Contents

Sr.#	Title
	1. Foods, Feeding, Cooking and Malnutrition
1	Importance of fish in the diet
2	Importance of meat in the diet
3	Using gelatin in food preparation
4	Importance of cheese in the diet
5	Thawing frozen foods
6	Herbs
7	The dark side of herbal medicines
8	Plant oil
9	Spices
10	Spice it up for flavor without calories
11	Choice of food
12	Salads
13	vegetables
14	Natural food protect
15	Health disorders related to unwise food I
16	Health disorders related to unwise food II
17	Health disorders related to unwise food III
18	Fast foods
19	Fast food "nutrition"
20	Fast foods-Pricks and pans
21	Fast food poisoning
22	Eat less, live long
23	Cooking practices affecting nutritional value
24	Meat
25	Choosing meat
26	Food intolerance
27	water
28	The harbinger of good health
29	Water and soft drink
30	Water filtration plant to be installed
31	Importance of milk in the diet
32	Milky woe
33	Calcium needs
34	Importance of egg in the diet
35	Tea good for memory
36	Honey; the king of natural healers
37	Sweetened beverages
38	Deep-fried fasting regime
39	Safest way to defrost meat
40	Preventing micronutrient malnutrition
41	Leave medicines and eat healthy diets
42	Breast feeding
43	Unsafe drinking water could be killing you
44	Packaged food technology
45	Food for profit
46	Alcohol and caffeine
47	Food additives & contaminants
48	Vitamin vitality
49	Steps for quality food urged
	2. Obesity
50	Guidelines for body weight
51	Obesity
52	Obesity ; the disease of the millennium
53	Pill failure linked to obesity
54	Fast food; a cause of obesity & diabetes
55	Why women touchy about size?
56	Stopping smoking and weight control
57	Powerful anorectic agent
109	Treatment of endometriosis
110	Gout pain
111	Free radical mediation of cell injury
112	Liposuction
113	Eid; an occasion for poor to eat meat
114	Veiling products
58	Being fat is not your fault
	3. Diet Plans
59	Weekly food menu for diabetics
60	Watch your meat intake
	4. Diabetes
61	Glycemic index
62	Diabetic diet
63	Diabetes and your diet-the common misconceptions
64	Tips for the control of diabetes with sensible diets
65	Dieting away risk for diabetes
	5. Hypertension
66	Effect of almonds & walnuts on cholesterol
67	Management of hypertension
68	High blood pressure & the natural healing
69	Management of blood pressure
70	Rational treatment of hypertension
	6. Cancers
71	A self-test to determine cancers
72	Simone ten point plan against cancer I
73	Simone ten point plan against cancer II
74	Simone ten point plan against cancer III
75	Natural food protectors against cancers
76	Naturally occurring carcinogens
77	Nutrition, immunity and cancer
78	Cancer in Pakistan
	7. Fertility, pregnancy, sex and Infants
79	Viagra-still a news
80	Viagra can restore the most pleasurable activity
81	Pregnancy can go well for women with diabetes
82	Essentiality of linoleic acid and alpha-linoleic acid
83	Causes of male infertility
84	Impacts of supplementing new born with vitamin A
85	The risk of artificial infant feeding
	8. Drugs
86	Pill failure
	9. Habits
87	Let us eat right & let us get well I
88	Let us eat right & let us get well II
89	Let us eat right & let us get well III
90	Hand washing
91	Prolong exercise in the heat requires salt
92	How to really relax
93	Dining out
94	Not so rosy
95	Fact file
96	Passive smoking
97	You are what you eat
98	Eat right without thinking
	10. General
99	Human blood statistics
100	General health, vigor & vitality
101	Phyto-therapy
102	Salt loving microbes
103	Corporate farming & food security
104	Can food be preserved?
105	Food security: unfulfilled dream
106	Exploitation of Pacific tuna
107	A plea for all seasons
108	Glug: an interview

Bulletin of
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NATURALLY OCCURRING CARCINOGENS AND MUTAGENS

Some foods have naturally occurring carcinogens or mutagens. Plants have certain molecules to protect them against microorganisms and insects, and some of these are carcinogenic or mutagenic in humans. The following are only a few of these foods and are listed with their carcinogens in parentheses: black pepper (piperine and safrole), bruised celery (psoralen), herbal teas (pyrrolizidine, phorbol esters), mushrooms (hydrazines), and all foods containing mold (aflatoxin) or bacteria (nitrosamines).[102-108] A complete review of these is given in the reference by Ames.[109] Many of these are occasional contaminants, whereas others are normal components of relatively common foods, as you can see. The ones that pose the greatest risk of cancer in humans are those especially from mycotoxins, that is, aflatoxin and nitroso compounds from bacteria.

Some foods also contain mutagens, which are chemical compounds that cause heritable changes in the genetic material of cells. Many vegetables contain mutagenic flavonoids, and mutagens are seen in charred and smoked foods. Mutagens can also be produced at lower temperatures, such as from the normal cooking of meat. Other commonly consumed items like coffee and horseradish also contain mutagens (quinones and allyl isothiocyanate, respectively).[110] The overall risk of developing cancer from mutagens in human beings is thought to be minimal.

FOOD ADDITIVES

The "Delaney clause" of the Federal Food, Drug, and Cosmetic Act,[111] written because of food additives, prohibits the addition of any known carcinogens to food. Currently there are about 3,000 intentional food additives. One is nitrite, which can be converted in the body to a potent carcinogen, nitrosamine. There are over 12,000 unintentional additives from packaging, food processing, and other phases of the food industry that are occasionally detected. Those in the unintentional category that are of some concern to us are vinyl chloride and diethylstilbestrol, which are used in food packaging and processing and in the foods fed to many livestocks. The overall risk of human cancer from food additives is thought to be quite minimal at this time, however.

EPIDEMIOLOGICAL STUDY OF DIETARY FACTORS

One of the largest epidemiological studies done of dietary and other factors in both China and the United States has been completed by Cornell University. A total of 6,500 Chinese participated in the study, and each contributed 367 facts about his or her eating practices and other habits. This study was begun in 1983 and completed in 1990.

The study found that the Chinese consume 20 percent more calories than Americans but that Americans are more obese. Chinese people eat only a third of the amount of fat that Americans do and eat twice as much starch. Our government agencies recommend that Americans reduce their percentage of calories from fat to 30 percent; however, I recommend only 15-20 percent of total calories from fat. The level of 30 percent may not be enough to curb the risk of heart disease and cancer, as demonstrated by this Chinese study.

The Cornell University study also showed that Americans consume 33 percent more protein than the Chinese and that 70 percent of this protein comes from animal sources, compared to only 7 percent coming from animals for the Chinese. The Chinese who eat the most protein have more heart disease, cancer, and diabetes.

Diets rich in fat and high in calories and protein also promote growth and early menarche, which, as we discussed, has been associated with higher cancer rates, especially breast cancer. Chinese women rarely suffer from these cancers and start menstruating three to six years later than Americans.

Osteoporosis is very uncommon in China. Unlike Americans, the Chinese do not consume dairy products; instead they get all their calcium from vegetables. They consume only half as much calcium as Americans and yet do not have osteoporosis. This indicates that calcium derived from dairy products is certainly not needed, and since dairy products contribute to the fat content of your diet, it is wise to limit or avoid their consumption.

While Chinese people are a genetically similar population, there are differences in dietary habits, environmental exposures, and disease rates in China from region to region. For instance, the cancer rate varies by a factor of several hundred from one region to another. These facts make this an important study, since the genetic contribution to cancer in China is minimal. Any differences in cancer rates and other chronic illnesses, like heart disease, can therefore be attributed to dietary and other environmental exposures

In poor areas of China, infectious disease is the leading cause of death. In areas that are more affluent, heart disease, diabetes, and cancer are more often seen. These differences are typical and confirm what we have said: chronic illnesses including cancer, diabetes, and heart disease are more prevalent in affluent countries than poorer ones.

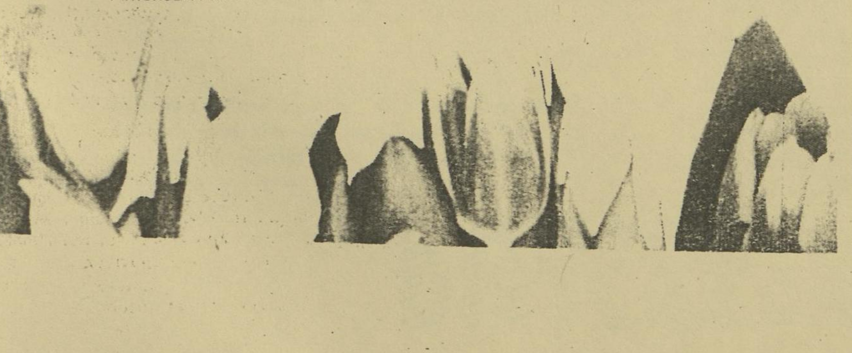
As with most other studies, high cholesterol levels were shown to be predecessors of cancer, heart disease, diabetes, and other chronic diseases. The Chinese study showed that low cholesterol protects against heart disease and also cancer, especially colon cancer. What is considered to be a high cholesterol level in China is thought to be low in the United States. In other words, the range of normal cholesterol levels for the Chinese is much lower than our levels.

The Chinese diet contains three times the dietary fiber of the typical American diet. The average intake of fiber in China is 33 grams a day with a high of 77 grams in some regions. Those with the highest fiber intakes also had the least diseases.

First Dietcare Centre

Under the Guidance of American Dietetic Association (ADA), USA

American Award ABI Laureate



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NUTRITIONAL EVOLUTION

The human race has existed for about two million years, and our prehuman ancestors for at least four million years. Today we are confronted with diet-related health problems that were previously of minor importance or totally nonexistent. Dietary habits adopted by Western society over the past hundred years have greatly contributed to the development of coronary heart disease, hypertension, diabetes, and cancer. These illnesses have dominated the past ninety-year history of humanity and are virtually unknown among the few surviving hunter-gatherer populations, like the Bantu tribesmen in Africa, whose way of life and eating habits today resemble those of man before agricultural development. Members of primitive cultures today who survive to the age of 60 or more are relatively free of these illnesses unlike their Western "civilized" counterparts.[4,5]

With the development of agriculture over 10,000 years ago, we began eating less meat and more vegetables. With less protein in our diets, our height declined by six inches. Since the Industrial Revolution, the pendulum started to swing back and we started to increase the protein content of our diets. Height increased and we are now nearly the same height as were the first biological modern men. But our diet is still very different from theirs: we are affluently malnourished.

Investigating the wild game in areas of the world where people are still quite primitive today, we find that these wild animals have less fat than domesticated ones because they are more active and have a less steady food supply. Also, domesticated animals are fed high concentrations of fat to produce tender meat. Wild game has fewer calories and more protein per unit of weight. Even modern vegetable food sources have more fat than noncommercially grown vegetables and fruits. Table 8.1 lists the various nutrients consumed by primitive man compared with those eaten by Americans today.[6]

Table 8.1 Diet Comparison of Primitive and Modern Man

Nutrient	Primitive Man	American Man	Our Recommendations
	Percentage of Total Calories		
Protein	34%	12%	10%
Carbohydrate	45%	46%	70%
Fats	21%	42%	20%
	Daily Consumption		
Cholesterol	591.0 mg	600 mg	250 mg
Fiber	45.7 gm	19 gm	30-45 gm
Sodium	690.0 mg	5,000 mg	1,000 mg
Calcium	1,580.0 mg	740 mg	1,500 mg
Vitamin C	392.3 mg	88 mg	400 mg

Given primitive man's wide variety of collected plant foods, and assuming that his vitamin C intake is representative of his overall vitamin intake from foods, the diet of primitive man contained substantially greater amounts of vitamins than ours currently. The vitamin and mineral content continues to decrease in our food supply by: pesticides, processing techniques like refrigeration, freezing and thawing, transporting around the country, etc. The protein content of early man's food was nearly two to five times that of ours. The early human diet contained much less fat than ours, and the fat that it did contain was of a very different mix from ours. Its cholesterol content was about the same as ours, but its total fat was much less than ours. In addition, primitive man consumed many more essential fatty acids than we do today. Since chronic diseases have been with us for only a few decades, with the incidence of cancer spiraling ever upward, we should perhaps model our modern diet after that of our ancestors.

We have created a food supply very different from that of our ancestors with the development of food technology and the chemicals used for its growth and production. This "advancement" is costly to the human race.

The effect of heat and changes during cooking

Texture and tenderness

The proteins of meat denature at temperatures of 40°C to 65°C. As the proteins denature, the structure of the meat tightens and the meat becomes firmer.

The protein of muscle fibres (actin and myosin) may toughen during some cooking methods.

The connective tissue is tenderized during cooking. It becomes shorter and thicker so that the meat shrinks in size. The collagen is converted to gelatine in the presence of moisture which greatly increases the tenderness. The elastin is only softened slightly.

Meat can be partially tenderized before cooking by:

1 Mechanically pounding, scoring, and cutting across the muscle fibres to reduce their length.
2 The use of enzymes, such as **papain** (from the pawpaw plant) which partially digest the protein.
3 Marinading in vinegar or alcohol.

Fat

The adipose tissue becomes more tender when cooked. The fat melts, and penetrates the lean meat during cooking, which increases the energy value of the lean meat. The fat content may also make the meat appear more juicy. On the skin of roasted meat, the fat becomes crisp and brown.

Colour

During cooking, the colour of meat changes from red to brown, due to the oxymyoglobin being converted to **haemochrome**.

Flavour

Cooking meat improves its palatability. In dry cooking methods, **extractives** containing flavour are squeezed out of the meat on to the surface as the protein denatures and shrinks. These extractives give meat its characteristic taste. The fat melts and gives a crisp surface to the meat.

In moist methods of cooking, the extractives are leached into the cooking liquid, which should be served with the meat to give it flavour.

Nutritive value

Protein The nutritive value of proteins in meat is little affected in normal methods of cooking. But, if overcooked, they become less digestible.

Vitamins The fat-soluble vitamins remain stable, but the water-soluble B vitamins may be leached into the cooking liquid in moist methods of cooking. Thiamin is particularly heat sensitive and may be destroyed in dry methods of cooking.

Minerals There may be some leaching of minerals into the cooking liquid in moist methods of cooking. The liquid should be served with the meat.

Bulletin of
First DietCare Center

NATURAL FOOD PROTECTORS

For a number of years researchers, prompted by epidemiological evidence in the United States and abroad, have begun to study the importance of foods that can enhance your health. Although the research is still in progress and none of the findings are conclusive, and it is known that any substance can be toxic when taken in excess, the following are among the most studied foods today. See Table 8.4, Natural Food Protectors.

Carotene

There are now fourteen ongoing prospective randomized studies sponsored by the National Cancer Institute that look at the anticancer potential of carotene in high risk patients. Over thirty studies have shown that people who consume foods with high amounts of carotene have a low risk for developing cancer.

Carotene has also been shown to be the most potent antioxidant, i.e., which neutralizes free radicals and also single oxygen radicals. In addition, it has been shown to be one of the more important enhancers of the human immune system and can also reverse precancer conditions.

Indoles

Indoles, found in the cabbage family, can destroy or otherwise inactivate estrogen. Estrogen is known to initiate new cancers, especially breast cancer.

Isoflavones

This is one of the more exciting areas of cancer prevention. Isoflavones, predominantly found in legumes, have been shown to inhibit or block estrogen receptors thereby prohibiting the cell from its normal cellular function without estrogen. Isoflavones also inhibit estrogens from being effective in the first place, and have been shown to destroy certain cancer gene enzymes that can propagate and transform a normal cell into a cancer cell.

Lignans

Lignans are predominantly found in flaxseed, walnuts, and fatty fish. Each of these is an excellent source of omega-3 fatty acids, which are known to inhibit the production of prostaglandins, hormones that modulate cell metabolism. Numerous studies have shown that omega-3 fatty acids have been used to reduce cholesterol, hypertension, heart disease, and the risk for developing breast cancer, rheumatoid arthritis, and multiple sclerosis. Lignans have also been shown to inhibit the action of estrogens on cells that are responsive to estrogen.

Polyacetylene

Polyacetylene, mainly found in parsley, inhibits the action of prostaglandins and destroys a potent carcinogen called benzopyrene.

Protease Inhibitors

Protease inhibitors, mainly found in soybean, have been shown to inhibit the development of colon cancer, lung cancer, mouth cancer, liver cancer, and esophageal cancers in animals. Protease inhibitors do this by inhibiting the action of the enzymes chymotrypsin and trypsin, as well as by preventing the conversion of normal cells to malignant cells in the early stages of carcinogenesis, but not in the late stages. These protease inhibitors have been shown to cause an irreversible suppressive effect on the process of carcinogenesis. They can also inhibit oncogene expression.

Terpenes

Terpenes are mainly found in citrus fruits. The National Cancer Institute is sponsoring studies to investigate the use of vitamin C and citrus fruits to treat certain viruses, to lower blood cholesterol, to reduce arterial plaque, and to prevent certain forms of cancer. Terpenes also have been shown to increase enzymes known to break down carcinogens.

Triterpenoids

Triterpenoids are found in licorice. The National Cancer Institute is studying the potential of licorice to fight cancer, protect the liver, and slow cell mutation. Triterpenoids inhibit estrogens, prostaglandins, and slow down rapidly dividing cells like cancer cells to prevent them from having daughter cells.

Phenylalanine and Tyrosine

Investigators at Washington State University found that cancer did not spread in animals if they were kept on a stringent diet that eliminated two amino acids, phenylalanine and tyrosine. Although these animal experiments have been repeated many times, human studies of this nature have not been done. However, the foods that have a high content of phenylalanine and tyrosine are those that are high in fats or high in protein: meats, eggs, and dairy products. Avoid or limit these, and increase consumption of fruits, vegetables, and carbohydrates.

Quinones

Quinones are mainly found in rosemary, and these chemical agents have been shown to inhibit carcinogens and co-carcinogens, chemicals that help carcinogens work more effectively to cause cancer.

Sterols

Sterols are mainly found in cucumbers, especially the skin of cucumbers. Sterols have been shown to decrease cholesterol; and by lowering the cholesterol, you lower most of the fat content that is linked and associated with multiple cancers, including colon and rectal cancer, breast cancer, prostate cancer, and cancer of the uterus, endometrial cancer.

Sulfur

Sulfur is found in large amounts of garlic. Garlic has been used in Japan as a painkiller. The National Cancer Institute, the United States Department of Agriculture, and Loma Linda University are currently studying garlic as an immune system enhancer, a cancer preventive agent, a blood clot inhibitor, and an agent to lower high blood pressure. Sulfur compounds from garlic inhibit carcinogens, and inhibit the enzymes that allow cancers to spread.

Soups and stocks

Soups

Soups are included in meals for the following reasons:

1 As appetizers.
2 To provide hot food in cold weather.
3 To provide flavour and energy.

Types of soup

Soups are normally based on one main ingredient, e.g. a vegetable, meat, or pulses, and can vary in consistency as follows.

Thick soups

These can be either puréed, or thickened by starch or egg protein.

Puréed These are usually sieved or liquidized and may be further thickened by starch.

Thickened by starch or protein These may have small solid ingredients in them, e.g. vegetable pieces.

Both types of thick soups can have cream added, and are normally served in cold weather as a substantial part of a meal.

Clear soups

These usually consist of a well-flavoured clear stock, served with a garnish, such as thin strips of carrot.

Broths are a variation of clear soups and usually contain small pieces of meat or poultry, with rice, pasta, or oats.

Mixed soups

These usually contain a mixture of ingredients, e.g. meat and vegetables, with perhaps pasta or rice included as well.

Preparing soups

A well-prepared soup should have the following qualities:

a good flavour and colour
non-greasy
well seasoned
finely chopped ingredients that are easy to fit on to a spoon
no lumps, if it is a smooth soup

For each 575 ml of water or stock, a soup should have:

450 g vegetables
or 225 g meat or poultry
or 100 g pulses (soaked)

It is important not to overcook the soup as this may spoil its flavour. If stock is used as the liquid, it should be fresh and well flavoured.

Serving soups

Soups can be served with:

croutons of toast or fried bread
bread rolls or sticks
grated cheese
slices of bread with grilled cheese on top
chopped fresh parsley
strips of carrot or celery

All of these will increase the nutrient value of the dish. Usually 150 ml of soup per person is enough.

Stocks

A stock is a well-flavoured liquid which is obtained by simmering a food in water for some time in order to extract flavour from it. Stocks have little food value on their own, and are mainly used as the bases of soups, sauces, and gravies.

Types of food suitable for stock making

1 Vegetables and vegetable liquid, except for green vegetables which can be bitter.
2 Bones from meat, fish, and poultry.
3 Meat, poultry, and giblets.
4 Bones and scraps of white fish.

Rules for making stock

1 The ingredients must be fresh and clean.
2 Cut up the ingredients so that all the flavour can be extracted, and remove fat.
3 Cover the ingredients with cold water, bring slowly to the boil, and simmer for 2-3 hours. To concentrate the flavour, remove the lid.
4 Skim the stock to remove fat and other ingredients that produce a foam on the surface.
5 Strain the stock as soon as it is ready, cool quickly, and store in a cold place.
6 Use the stock as soon as possible. It will keep for up to three days if stored in a cool place.
7 Do not use the stock more than once. Warm stock is an ideal breeding ground for bacteria.

Stock which is made from bones usually sets to a jelly due to the conversion of collagen to gelatine ([illegible]), but it has little food value as there is only a small amount of protein present.

Stock cubes or powders can be used in place of home-made stock and are quick and convenient.

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BALANCED DIET, HEALTHY LIFE

Plant oils

Plant oils are mostly obtained from the seeds of plants such as:

soya bean	cottonseed
sunflower	groundnut
coconut	palm
linseed	olive
sesame	maize
rapeseed	

Apart from their uses in the food industry, plant oils are also used in the manufacture of paints, varnishes, and plastics.

Refining

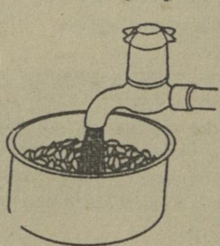
The plants that produce oil seeds are grown in many parts of the world. All oils that are used for food have to be **refined** first.

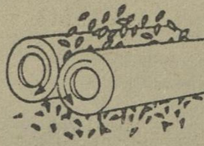
Oil is contained in the cells of the seeds. It is **extracted** from them either by squeezing or by dissolving the oil in a solvent, e.g. trichloroethene.

The cell walls of the seeds are hard to penetrate, so expensive machinery has to be used for extracting the oil.

The process involves the following stages:

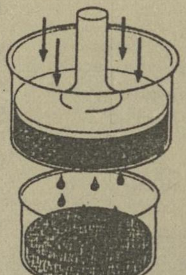
1 Cleaning the seeds.



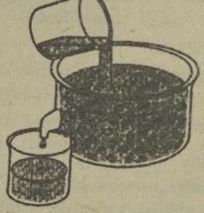


2 Breaking by rollers.

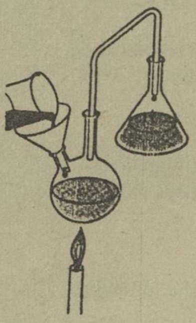
3 Cooking the seeds in steam.



4 Expelling the oil by squeezing (olive oil is cold-pressed, i.e. not cooked first)



or by extracting the oil with a solvent.



5 Removal of natural acids.

6 Bleaching to lighten the colour.

7 Deodorizing and improving the taste and smell.

The oils are sold separately or blended. Some oils, e.g. olive oil, are more expensive than others.

Oils that are exported to colder countries such as the UK have to be treated to stop them forming fat crystals in cold weather. This is called **winterization.**

Oils are used for:

margarine manufacture
frying
salad dressings

They are also used in the baking industry.

Structure and composition

Lean meat is composed of the **muscles** that move the body in an animal. Muscles are composed of **cells** in the form of long, slender **fibres**. These muscle fibres are made of two main proteins, myosin and actin.

The size of muscle fibres affects the **tenderness** of cooked meat:

slender, small fibres are associated with tender meat;
large, long fibres are associated with tougher meat.

Muscle fibres increase in size as the animal gets older, so the older the animal, the tougher the meat from it.

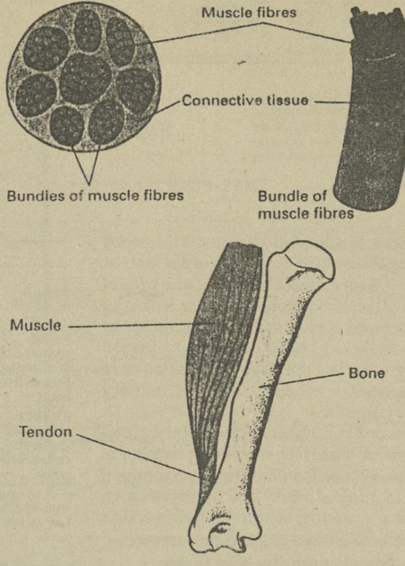
The parts of the animal's body that do the most physical work, e.g. neck, shin, forearm, have the largest muscle fibres, and so make tougher meat.

Individual muscle fibres are formed into **bundles**, surrounded by a substance called **connective tissue**. The bundles are then formed into groups which are also surrounded by connective tissue. Whole muscles are attached to bones by **tendons**.

Connective tissue is made of two proteins, collagen and elastin.

Collagen is the main component of tendons, and the connective tissue surrounding muscles, particularly those that do the most work. Collagen is less flexible than elastin, and when heated in the presence of moisture, it is converted into soluble **gelatine**, which greatly increases the tenderness of connective tissue and therefore of the meat. Traditionally, tough cuts of meat were cooked by slow, moist methods such as stewing, to allow this conversion to gelatine to take place. However, if tough cuts of meat are roasted slowly at Gas 3, 160°C (325°F), there is sufficient moisture within the meat to convert the collagen and make the meat tender.

Elastin is a main component of ligaments (in between bones), and has the ability to stretch and return to its original shape. It is an insoluble and tough protein, but there is less elastin than collagen in muscles, so it does not have a major influence on the toughness of meat.



The structure of muscle

Fat

In meat, fat is found in the following places:

under the skin in **adipose tissue**
around vital organs, e.g. kidneys (suet)
between bundles of muscle fibres (invisible fat)

The fat under the skin may be yellowish in colour, because of the presence of **carotenes** from plants, depending on what the animal was fed on. The fat between the bundles of muscle fibres gives the meat a **'marbled'** effect. Marbling in lean meat is an important requirement when the meat is graded, and large amounts of feed are required to produce it. This is one of the reasons why lean meat is so expensive.

The fat content of meat helps to give flavour, moisture, and texture to the cooked meat.

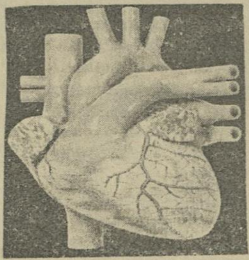
Steer clear of affairs for heart's sake

Daily Times
10.12.05

EXTRA-MARITAL sex can invite heart diseases, an expert warns.

A consultant cardiologist from Britain, Sanjay Arya, said during a talk on "sex and heart" that adultery and too much fooling around could lead to heart diseases. "When a person is involved in indiscreet or forceful sex, his heartbeat and blood pressure go up due to stress, which may cause heart disease," said Arya.

He recommends monogamous and matrimonial sex. However, the good news for heart patients is that "stress-free sex" is good for them. Recent medical research proves that a heart attack patient can safely resume sexual activity but with precaution.



He said a survey shows that only 33 percent of heart patients resumed sexual activity. The rest feared another heart attack. "Though casual sex was not advisable for heart patients, stress-free sex is good if patients are on proper medication." IANS

BALANCED DIET, HEALTHY LIFE
DIETCARE

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Bulletin of
First DietCare Center

Vol. 1 No. 4
September 1997

FAST-FOOD "NUTRITION"

Fast-food restaurants are here to stay, but how nutritious are the meals they serve? Two hundred people in the United States order one or more hamburgers every second.[112] Every day of the year, one fifth of the American population eats at a fast-food restaurant, according to the United States National Restaurant Association. The number of fast-food outlets increased from 30,000 to 140,000 during the period 1970 to 1980. And most disturbing is the fact that fast-food chains have expanded to elementary and secondary schools, colleges, military bases, other countries, and even hospitals.

Fast-food restaurants have increased in number because of the growing employment of women outside the home, the increasing number of people who live alone, the prevalence of smaller families and less formal lifestyles, an increased desire for convenience, and an increase in disposable income.[113] There is a growing reliance on fast foods for more than one meal a day; and because fast-food restaurants serve a need in our fast-paced society, they are probably here to stay.

Ever greater is the tremendous influence fast foods have on children who begin eating them at young ages. Because of the high fat, high sodium, low fiber, and low calcium content of fast foods, and because of their other nutrient deficiencies, we will see an increase in the development of diseases like cancer, cardiovascular diseases, obesity, and osteoporosis, as well as deficiencies of vitamins, minerals, and other nutrients.

Over the years we have recommended that Americans reduce their consumption of fat, cholesterol, and sodium, and increase their intake of fiber-containing foods, as well as certain vitamins like A and C, carotene, and calcium, among other nutrients. The fast foods that are currently available offer the reverse of the recommendations. A number of other agencies, such as the United States Surgeon General, the National Cancer Institute, the National Institutes of Health, the United States Department of Agriculture, and the American Heart Association, later concurred with these recommendations.

NUTRIENT COMPOSITION OF FAST FOODS

Fat

Most fast-food meals obtain 40 to 55 percent of their calories from fat. For example, the percentage of calories that a fast-food hamburger typically derives from fat is 40 to 58 percent. Some health-conscious people, thinking that chicken or fish would be lower in fat than a hamburger, might choose them over the hamburger; however, they also contain a great deal of fat. Six chicken nuggets have 20 grams of fat, that is, they obtain 58 percent of their total calories from fat. A fast-food chicken patty sandwich contains the same amount of fat as 1.5 pints of ice cream. Most fast-food establishments fry their chicken or fish in beef tallow, which increases the fat content of these foods many more times. On the other hand, some fast-food restaurants advertise that they fry with only 100 percent pure vegetable oil. The oils they use are palm and coconut, which contain no cholesterol but are highly saturated. Other vegetable oils used are highly unsaturated. As you may recall from Chapters 3 and 5, saturated fats cause heart disease and unsaturated fats have been implicated in cancer.

Sodium

There are between 700 and 900 milligrams of sodium in most fast-food sandwiches. If the purchaser also consumes French fries, ketchup, a milk shake, or a pastry, the amount of sodium increases dramatically. There are between 1,350 and 1,950 milligrams of sodium in each of the following foods: a triple cheeseburger, a roast beef sandwich with cheese, and a cheeseburger with bacon. The U.S. Recommended Dietary Allowance of sodium is between 1,100 and 3,300 milligrams per day.

Nutrient Values of Sample Fast-Food Meals[115]

Sample Meal	% Fat Calories	Calories	Cholesterol (mg)	Sodium (mg)	% U.S RDA Vitamin A	% U.S RDA Vitamin C	% U.S RDA Calcium
Double burger with sauce, milk shake, French fries, regular	46	1,275	155	1,190	10	30	80
Chicken nuggets (6), apple pie, coffee with cream	55	655	95	1,115	2	20	9
Fish sandwich with cheese and tartar sauce, soda (12 oz.), French fries, regular	53	885	73	811	2	20	19
Beef tacos(2), low-fat milk (8 oz.)	40	495	60	690	18	3	61
Single burger, tossed salad, low-fat milk	32	445	55	1,005	28	75	50
Baked potato, plain margarine (1 pat), tossed salad with low-calorie dressing, low-fat milk	18	340	10	620	28	120	45
Cheese pizza (1 slice), tossed salad with low-calorie dressing, orange juice (8 oz.)	30	310	40	500	27	233	26

Fiber

The fiber content of fast-food meals is extremely low. Some fast-food establishments have made a meager attempt to increase the fiber by introducing salad bars. When you examine the amount of fiber in these salads, however, you will discover that it is very little. In addition, the contents of these salad bars are sprayed with a chemical called sulfite to prevent them from turning brown, and this can also be harmful. Most people also use salad dressings that are high in calories, fat, and sodium.

Protein

The protein content of fast-food meals varies from 50–100 percent of the U.S. RDA. Children usually consume twice the RDA for protein. Concern over protein consumption has risen since we discovered evidence that high amounts of protein are linked with cancers, osteoporosis, and heart disease. If your protein consumption is double the U.S. RDA, 50 percent more calcium is lost through the urine.[114]

Calcium

Most fast-food meals are very low in calcium. As we have already learned, low calcium levels are associated with osteoporosis, hypertension, colon cancer, and perhaps Alzheimer's disease as well.

People who often eat at these fast-food restaurants should be aware of the nutritional value of these foods. As you can see by Table 8.5, found on the next page, fast foods are deficient in many nutrients. In addition, most consumers at fast-food restaurants prefer soda and coffee, which have little nutritional value, to other beverages. As was stated before, the average American has an insufficient intake of

Cont.... P/13

vitamins B_6, C, and E, folic acid, calcium, iron, magnesium, and zinc, among others. In addition, marginal deficiencies that we have already discussed affect millions of people in our country. Moreover, the total caloric intake of most Americans exceeds what it should be, resulting in 35–40 percent of the population being obese.

Fast-food restaurant owners are not required to comply with federal laws that mandate nutritional labeling or the listing of all ingredients of the foods they sell. So even if you wanted to know what the nutrient content of the food you were being served was, you could not find out at the time of purchase. You may wish to examine the analyses of fast foods that have been published.[116,117]

One of the most disturbing things about fast-food restaurants is their presence in children's hospitals in various cities of North America. It is this author's opinion that this is as bad as the tobacco industry's targeting of young people. Our society, I doubt, will reduce or eliminate fast-food dining. Therefore, we should aim to improve the nutritional quality of fast foods.

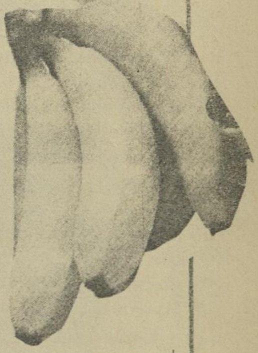
A large study was done to find out if dietary advice could help people who had suffered a heart attack prevent a second one from occurring. Over 2,000 patients were divided into three groups. One group received dietary advice on how to reduce fat intake, another group received dietary advice on how to increase fatty-fish intake, and the third group received advice on how to increase cereal fiber. The group given advice on fat intake had no difference in mortality (their serum cholesterols did not change). Those advised to eat fatty fish had almost a 30 percent reduction in two-year mortality compared with those who were not advised. The third group again had no difference in mortality. This study indicates that even after given advice about the proper thing to do, people rarely take it. The study group simply would not reduce their red-meat intake. One group did show that they would increase the fatty fish and benefited from that.[118] This study indicates that unless there is a strong motivating factor, and it is hard to imagine that a person's life is not such a motivating factor, people simply will not change habits even though they are told it will benefit them medically.

FOOD PROTECTORS

Natural Food Protectors

Protector	Food	Protective Action
Carotene	Carrots, sweet potatoes, yams, pumpkins, squash, kale, broccoli, cantaloupe	Neutralizes free radicals and singlet oxygen radicals; enhances immune system; reverses pre-cancer conditions; high intake associated with low cancer rate.
Indoles	Cabbage family: cabbage, broccoli, cauliflower, mustard green, etc.	Destroys estrogen, known to initiate new cancers, especially breast cancer.
Isoflavones	Legumes: beans, peas, peanuts	Inhibits estrogen receptor; destroys cancer gene enzymes; inhibits estrogen.
Lignans	Flaxseed, walnuts, fatty fish	Inhibits estrogen action; inhibits prostaglandins, hormones that cause cancer spread.
Polyacetylene	Parsley	Inhibits prostaglandins; destroys benzopyrene, a potent carcinogen.
Protease Inhibitors	Soybeans	Destroys enzymes that can cause cancer to spread.
Quinones	Rosemary	Inhibits carcinogens or co-carcinogens.
Sterols	Cucumbers	Decreases cholesterol.
Sulfur	Garlic	Inhibits carcinogens, inhibits cancer spread, decreases cholesterol.
Terpenes	Citrus Fruit	Increases enzymes to break down carcinogens; decreases cholesterol.
Triterpenoids	Licorice	Inhibits estrogens, prostaglandins; slows down rapidly dividing cells, like cancer cells.

Prolonged exercise in the heat requires salt replacement



Q Please straighten out the salt issue out for me. Some say that you should make sure to eat salt when you run on a hot day. Others say just the opposite. They say eating salt upsets your stomach. Which is the correct instruction?

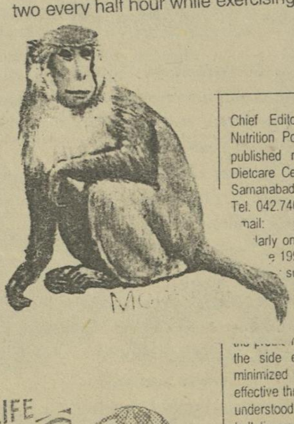
A Over the years, the salt recommendations prior to and during exercise have swung back and forth, so I understand your confusion.

Not too many years ago, the instructions for exercising in hot weather were to take salt tablets. At that time, the amount of salt in the tablets was quite high, and the tablets irritated the stomach. They created more trouble than they prevented, so the salt-tablet idea faded. Instructions then were to load up on wear before a prolonged exercise session and to keep drinking it all through the exercise session.

bulbs but they should not be lifted and stored,as is the case with tulips and daffodils in places such as Karachi, when they have finished flowering.7hey much prefer to take their chance in the ground on a permanent basis and, unless you increase your stock from seed, either purchased or collected from your own plants,if you lift the bulbs then they will not be able to multiply naturally.

Seeds are extremely easy to collect as after the flowers finish and dry out the hard black seeds are large enough to seetwith the naked eye unlike some other species of plants where you need a magnifying glass,and fall easily into your hand if you shake the paper dry flower head lightly.Seeds only ripen during sunny weather but as I have discovered wil stay green on the plant for long periods of time without rotting. As 'archi-

exercise, and don't keep drinking water compulsively during the exercise. Drink two or three glasses of lightly salted water two hours before exercising in the heat and a glass or two every half hour while exercising.



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BALANCED DIET, HEALTHY LIFE
DIETCARE

Food poisoning

Bacteria can be transferred to food by several means, including:

1 Using the same utensils to serve contaminated food and other foods.
2 Careless attention to personal hygiene while handling food, e.g. not washing hands after visiting the toilet, touching nose while preparing food.
3 Leaving skin infections and cuts uncovered while preparing food.
4 Coughing, sneezing, or spitting while preparing food.
5 Incomplete cleansing of food utensils and serving dishes.
6 Pests, e.g. houseflies, cockroaches, beetles, certain moths.
7 Rodents, e.g. rats, mice.
8 Household pets, e.g. dogs, cats, hamsters.
9 Infected or diseased cattle and dairy cows.
10 Contaminated water supply.
11 Soil and dust.

Once bacteria have been transferred to a food, they will grow and multiply under the following conditions:

1 Incomplete thawing and cooking of certain foods, e.g. poultry, pork (see p.202).
2 Holding cooked foods, e.g. chicken, shellfish, at room temperature before serving.
3 Incomplete or repeated cooking of leftover food (see p. 204).
4 Careless storage of food.

In the UK, food poisoning is a notifiable disease, i.e. all cases should be reported by a general practitioner to the Local Health Authority, so that they can inspect food-serving premises and shops to identify the cause of the illness and prevent its recurrence.

Quite often, however, the symptoms of food poisoning are relatively mild and may not require medical attention. Such cases are not reported, so it is difficult to know how many cases there are each year. From the number of cases which are reported, however, it is clear that food poisoning is a widespread problem.

Government guidelines, which should be displayed in food shops, state:

> Babies, elderly people, people recovering from illness, and pregnant women should never eat raw egg in any form. Eggs should be well cooked so that both white and yolk are solid. Pregnant women and people with a low resistance to infection should avoid eating soft, ripened cheeses (e.g. Brie, blue-veined, Camembert), pâté, or under-heated cook-chill ready-made meals (see p. 56).

Reasons for the increase in the number of cases of food poisoning

1 More ready-prepared foods are eaten, e.g. meat pies, pasties, partly cooked breads.
2 More people eat out at restaurants, take-away shops, and hotels. Large-scale catering may result in outbreaks of food poisoning.
3 Increased importing of food, from countries where food hygiene laws may not be strictly enforced.
4 Increased importing of animal feeds, which may be contaminated and will infect the animals that eat them.
5 Insufficient training of staff who handle food.
6 Failure by consumers to store food correctly and use it by the recommended date.
7 Temperature too high in domestic freezer or refrigerator, leading to the growth of bacteria.

Moulds

Moulds are tiny plants, which are just visible to the naked eye. They grow on many types of food, especially cheese, bread, and fruit. They grow best in warm, moist conditions, but will grow at a slower rate in cool places.

Moulds reproduce by means of sporulation.

Spores are released into the atmosphere and carried in the air. If they land on a suitable food, the spores germinate, and a new mould appears.

Food that is contaminated with mould often looks safe to eat as only the outer part is affected by mould growth. However, substances produced by the mould may migrate into the food and be harmful to many organs of the body. These substances are called mycotoxins. It is therefore advisable to discard mouldy food completely, rather than just to remove the mouldy part.

Mould growth is prevented by:

cool, dry storage
heating to destroy moulds and spores
acidic conditions

Mould in cheese

Not all moulds are harmful. Specially produced moulds are added to certain cheeses, e.g. Stilton, Danish Blue, to develop characteristic flavours.

Table. on p:20

Curry spice may fight Alzheimer's

THE pigment that gives curry spice its yellow hue may also be able to break up the "plaques" that mark the brains of Alzheimer's disease patients, early research suggests.

Scientists found that curcumin, a component of the yellow curry spice turmeric, was able to reduce deposits of beta-amyloid proteins in the brains of elderly lab mice that ate curcumin as part of their diets.

In addition, when the researchers added low doses of curcumin to human beta-amyloid proteins in a test tube, the compound kept the proteins from aggregating and blocked the formation of the amyloid fibers that make up Alzheimer's plaques. Accumulation of beta-amyloid proteins in the brain is one of the hallmarks of Alzheimer's disease.

The new findings suggest that curcumin could be capable of both treating Alzheimer's and lowering a person's risk of developing the disease, said study co-author Dr Gregory M Cole of the University of California Los Angeles and the Greater Los Angeles Veterans Affairs Healthcare System.

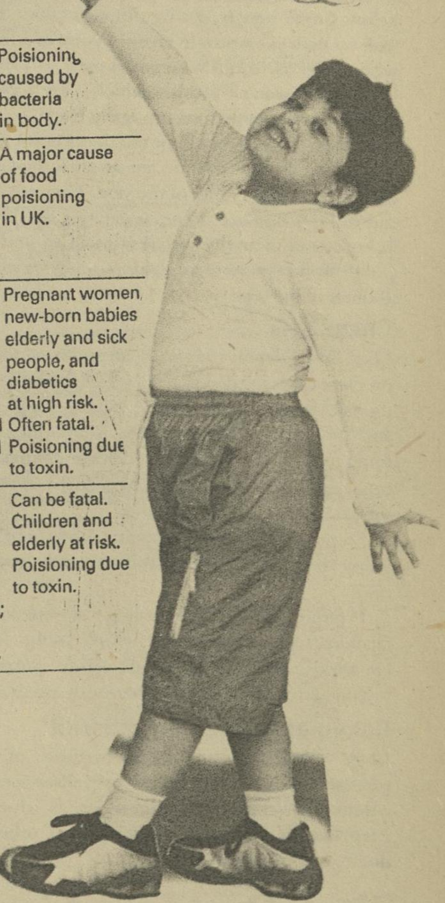
Cole and his colleagues have gotten funding to begin a small trial in humans suffering from Alzheimer's disease. "The big question is how high are the doses we need to fight Alzheimer's and are they really safe in elderly patients?" he told Reuters Health.

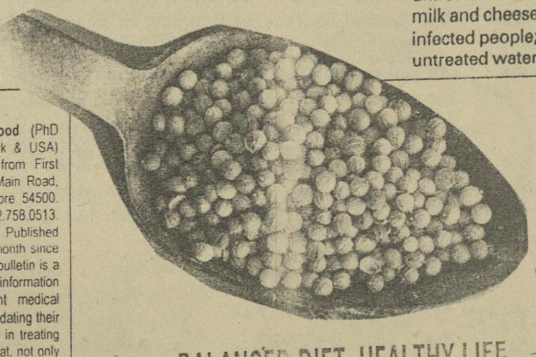
The current findings, published online recently by the Journal of Biological Chemistry, add to the body of research pointing to curcumin's medicinal value. Long used as part of traditional Indian medicine, curcumin is now under study as a potential cancer therapy, and animal research has suggested the compound might serve as a treatment for multiple sclerosis and cystic fibrosis. REUTERS

Cont... Food Poisoning

Main causes of bacterial food poisoning

Bacteria type	Name	Illness		Symptoms	Sources	Notes
		Incubation	Duration			
Cocci	*Staphylococcus aureus*	1–6 hrs	1–6 days	Severe vomiting, diarrhoea, exhaustion.	Nose, skin, cuts, sores, cooked meat, pies, custards, ice cream.	Poisoning due to toxins. Heat does not destroy toxin.
Bacilli	*Salmonella typhimurium*	12–48 hrs	7 days	Headache, fever, vomiting, abdominal pain.	Faeces, sliced or cooked meat, poultry, pies, sausages, eggs.	Main cause of poisoning In UK. Can be fatal.
Clostridia	*Clostridum botulinum* (botulism)	12–36 hrs	Fatal within 7 days	Double vision; difficulty with breathing, talking, and swallowing.	Improperly canned food, especially meat, vegetables.	Rare, but fatal in most cases. Exotoxin produced.
Clostridia	*Clostridium welchii*	8–24 hrs	1–2 days	Diarrhoea, abdominal pain, headache.	Meat pies, gravy, canned meat, soil.	Poisionin due to toxin fr teria in gut
Bacilli	*Salmonella typhi*	1–3 weeks	1–2 months	Headache, tiredness, fever, rash, haemorrhage.	Sewage, water, flies, cream cake, watercress, canned meat.	Car Slo.
Bacilli	*Bacillus cereus*	2–18 hrs	1–3 days	Vomiting, diarrhoea, abdominal pain.	Faeces, cold meats, gravy, cream, sausages.	Poisioning caused by bacteria in body.
Bacilli	*Campylobacter jejuni*	2–5 days	2–5 days	Profuse diarrhoea (blood stained), abdominal pain, nausea, exhaustion.	Unpasteurised milk, under-cooked poultry, raw meat.	A major cause of food poisioning in UK.
Bacilli	*Listeria monocytogenes*	5 days–5 weeks	Varies	Like flu, still-birth, miscarriage, blood poisioning, pneumonia, meningitis.	Widespread in water, manure, soil, milk, milk products, soft cheeses, pâté, meat, poultry, prepared salads, cook/chill products.	Pregnant women, new-born babies elderly and sick people, and diabetics at high risk. Often fatal. Poisioning due to toxin.
Bacilli	VTEC 0157	12–60 hours	Varies	Abdominal cramps, vomiting, diarrhoea.	Farm animals; under-cooked minced beef, beefburgers, untreated cow's milk and cheese; infected people; untreated water.	Can be fatal. Children and elderly at risk. Poisioning due to toxin.





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BALANCED DIET, HEALTHY LIFE

DIETCARE

Bulletin of
First DietCare Center

Vol. 1 No. 6
November 1997

Vegetables

A wide variety of fresh vegetables can now be purchased. Many of them are imported and have only been available in the UK for a relatively short time. Vegetables are also available in a preserved state, frozen, canned, or dried. Many can be grown in domestic gardens.

Vegetables are usually served as accompaniments to main meals, but with imagination and good cooking, they can be used as the main part of a meal in a variety of interesting ways.

Types

Vegetables can be classified according to the part of the plant from which they come, as described below. Some people distinguish vegetables from fruit by their inclusion in savoury parts of a meal, while fruits are eaten with sweet parts of a meal. However, some foods which are called vegetables, e.g. tomatoes, are really fruits.

If vegetables are grown out of doors in the UK, they are only available or are at their best and cheapest at certain times of the year. They are then said to be 'in season'. Many vegetables are grown in hothouses or are imported from all around the world, so it is possible to obtain a wide variety at all times of the year.

Chemicals

Over 400 different chemicals are approved for use on plant crops in the UK. They include pesticides, insecticides, herbicides (weed killers), fungicides, and growth regulators. There is evidence that some may cause cancer, birth defects, asthma, and other disorders if eaten, so all vegetables and fruits should be washed before eating.

Some chemicals are systemic (they work by going right into the plant) and cannot be washed off.

Pressure groups are trying to encourage farmers to produce plant crops using fewer chemicals, and the Soil Association promotes organic farming where no chemicals are used.

Colour of vegetables and fruit

Leafy vegetables are green because of the presence of **chlorophyll**. The yellow/orange colour of fruits and vegetables is due to **carotenoids**. The red/blue colour of others is due to **anthocyanins**.

Preparation and choice

Vegetables should be chosen carefully:

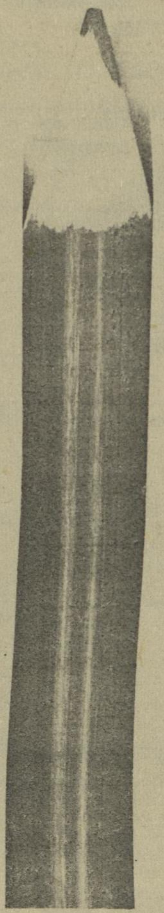
1 Damaged, wilted, and bruised vegetables should be avoided, as there is likely to be waste and loss of nutrients.
2 Leaf vegetables should be crisp, firm, and of a good colour, and root vegetables should be firm and free of spade marks.
3 Insect- or mould-infected vegetables should be avoided.

To preserve the vitamin and mineral content, vegetables should be prepared as follows:

1 If the vegetable requires peeling, peel it very thinly, as there are vitamins and minerals under the skin which could easily be removed. Young potatoes, carrots, and other vegetables often do not require peeling and can be served with their skins on. They should be scrubbed thoroughly beforehand, to remove chemicals.
2 Prepare vegetables just before cooking to prevent the destruction of vitamins by enzymes. They can be placed in a plastic bag in a cool place to prevent the oxidation of vitamins.
3 Wash the vegetables but do not soak them in water, as this will cause water-soluble vitamins and minerals to be lost.
4 Cook the vegetables in the minimum amount of boiling water. Placing them in boiling water destroys enzymes, and so helps to preserve the vitamins. They should be cooked for the minimum time, with a lid on the pan.
5 When vegetables are just tender, they should be drained and served immediately. If kept hot, there will be further losses of vitamin C.

Conservative method of cooking vegetables

Vegetables, except for leaf types, can be chopped and sautéed in fat, then placed in a covered casserole with a little liquid in the oven, and cooked until tender. The juices should be used for gravy. This conserves most of the flavour, colour, and shape of the vegetables. Microwave cooking of vegetables in a minimum of water also conserves nutrients.



FIRST
DIETCARE
CENTRE

Dr. Sultan Mahmood
Ph.D (Nutrition), Poland;
Post - Doc. Denmark

First Dietcare Centre
Under the Guidance of American Dietetic Association (ADA), USA
American Award ABI Laureate

Effect of heat

Vegetables are cooked to reduce their bulk and make them more digestible by cooking the starch they contain. Some vegetables, e.g. potatoes, increase in bulk when cooked as they absorb water. Vitamins and minerals, particularly vitamin C, are destroyed by heat, so vegetables should be cooked carefully to keep such losses to a minimum.

Importance in the diet

Vegetables are eaten in a variety of ways as part of main meals and as snacks. The nutrient content of different types varies considerably. With the exception of pulses, vegetables provide little protein and fat.

Vitamins

Water soluble

Vitamin B group Most vegetables contain some riboflavin and nicotinic acid, and pulses provide a good supply of thiamin.

Vitamin C The richest sources are Brussels sprouts, kale, cabbage, green peppers, watercress, spinach, cauliflower, tomato, and asparagus (in that order). Potatoes contain a reasonable amount, and as they are eaten in large amounts, are a useful source.

Fat soluble

Vitamin A (as **β-carotene**) Carrots and dark green vegetables contain the most. Potatoes, onions, and cauliflower contain none.

Vitamin D Vegetables do not contain vitamin D.

Vitamins E and K Green vegetables and peas contain a little.

Carbohydrate

Plants produce starch during photosynthesis (see p. 9). The starch is stored in various parts of the plant, notably the roots and tubers. Some of the starch is converted into sugar in vegetables such as beetroot, onion, peas, leeks, tomatoes, and parsnips.

Minerals

Calcium and iron are found in various vegetables including watercress, cabbage, lentils, and spinach, but the presence of cellulose and **oxalic acid** reduces their availability to the body.

Storage of vegetables

Potatoes should be stored in a dark, cool, dry place to prevent them from becoming mouldy and green (due to a reaction to light), and to stop them sprouting in warmth. Root vegetables should be stored in a similar way.

Leaf vegetables lose vitamin C and water rapidly during storage and should be stored for the minimum time in a cool place, in a plastic bag.

All vegetables should be used as soon as possible.

Types of vegetable

Leaves

- cabbage – green, red, white
- spring greens
- kale
- Brussels sprouts
- spinach
- cress and watercress
- chicory
- endive
- lettuce – cos, Webbs, iceberg, little gem
- kohl rabi
- Chinese leaves

Seeds and pods

- peas
- runner beans
- broad beans
- French beans
- mangetout

Fruit

- tomatoes
- cucumber
- marrows
- corn on the cob (strictly a cereal but eaten as a vegetable)
- capsicum (sweet red, green, yellow, or white pepper)
- aubergine
- courgettes (sometimes called zucchinis)
- okra (ladies fingers)
- ackee
- squash
- spaghetti squash

Stems

- celery

Flowers

- cauliflower
- purple or green broccoli
- calabrese

Roots

- carrot, beetroot
- swede, parsnip
- turnip
- radish
- celeriac
- mooli (white radish)
- salsify

Bulbs

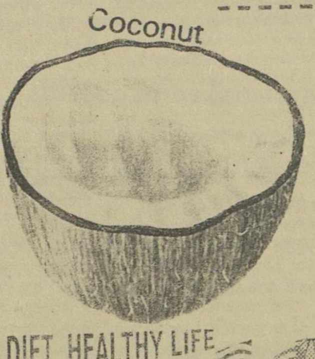
- onions
- pickling onions
- spring onions
- shallots
- leeks

Tubers

- potatoes
- Jerusalem artichokes
- cassava
- sweet potato
- yam
- eddoes

Spices for Every Day

- ▩ Sprinkle paprika on potatoes, chicken, fish or vegetables. Paprika is made from both sweet and hot peppers.
- ▩ Add a dash of cinnamon or cardamom to coffee grounds.
- ▩ Can't give up your cinnamon toast? Hit the toast with a couple of spritzes of butter spray and then sprinkle on sugar mixed with cinnamon, nutmeg and a pinch of allspice.
- ▩ Add celery seed to coleslaw made with low-fat dressing.
- ▩ Ground coriander is an aromatic addition to poaching liquid for fish.
- ▩ Nutmeg enhances spinach dishes. Mix it with low-fat ricotta or cottage cheese in veggie lasagna.
- ▩ A pinch of cinnamon, cardamom, allspice or nutmeg added to fat-free whipped topping makes a lovely accompaniment for fresh fruit.
- ▩ The yin and yang of cayenne pepper and sliced melon is a satisfying taste.
- ▩ Add saffron, turmeric or curry to water while cooking grains such as couscous, rice or barley.



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Bulletin of
First DietCare Center

Vol. 1 No. 7
December 1997

Impact of supplementing newborn infants with vitamin A

With an objective to assess the impact of supplementing newborn infants with vitamin A on mortality at age 6 months, a community based, randomized, double blind, placebo controlled trial was conducted in two rural districts of Tamil Nadu, southern India: The study was conducted between June 1998 and March 2001.

Results

Overall, 13 294 infants were born; 6670 (50.2 per cent) were allocated placebo and 6624 (49.8 per cent) were allocated vitamin A. After exclusions, 11 619 liveborn infants were enrolled and followed; 5833 (50.2 per cent) in the placebo group and 5786 (49.8 per cent) in the vitamin A group. Baseline characteristics of the families, mothers, and infants were similar between the treatment groups. This applied to all deliveries and to those infants who were enrolled. Five to six per cent of women reported a history of night blindness, a clinical symptom of vitamin A deficiency. The mean birth weights were 2675 g in the placebo group and 2673 g in the vitamin A group (31 per cent of infants weighed less than 2500 g). Similar proportions of mothers in both groups began breast feeding within 12 hours of birth and reported expressing colostrum. Mortality of infants born alive but not enrolled was similar in both groups. Eighty per cent of infants were first dosed within 48 hours of birth (median time to first dosing, 25.5 hours in placebo group and 26.4 hours in vitamin A group).

Supplementing newborn infants with vitamin A was associated with a 22-23 per cent reduction in mortality during the first six months of life. Similar estimates of relative risk were obtained by using the incidence density analysis (0.78, 95 per cent confidence interval 0.63 to 0.96), infant mortality at six months (0.77, 0.62 to 0.96), and an estimate of the hazard ratio (hazard ratio 0.78, 0.63 to 0.97).

Little evidence was found for effect modification by sex test for interaction, P=0.33): The impact of vitamin A on survival was limited to infants who were treated before 14 days, although the strength of evidence for this interaction was low (test for interaction, P=0.68). The effect was also limited to infants of low birth weight. In this group, vitamin A reduced mortality at six months by 37 per cent. In contrast, there was no effect of vitamin A on mortality among infants weighing 2500 g or more at birth (test for interaction, P = 0.02).

Discussion

Giving newborn infants two doses of 24,000 IU of vitamin A within 48 hours of birth significantly reduced early infant mortality. The results of the study follow the pattern of another study conducted in a hospital in Indonesia, which reported a 64 per cent reduction in infant mortality associated with giving newborn infants 50, 000 IU of vitamin A. The present study results highlight that the impact of vitamin A on survival was limited to the first three or four months of life. The greatest impact in the Indonesian study was among infants who weighed 2500 g or more at birth. In contrast, this study found the greatest effect among infants of low birth weight.

The discrepancy with studies that supplemented infants later in the first six months suggests something unique about receiving a large dose of vitamin A shortly after birth. Although the underlying mechanism for this differential impact by age is unknown, two explanations are plausible. Humans are born with marginal reserves of vitamin A and depend on breast milk or other sources to meet their metabolic demands in the first few months of life. Premature infants have even lower reserves of vitamin A, and correction of the deficiency has been shown to reduce the respiratory complications of preterm birth.10 A large bolus of vitamin A early in the neonatal period may provide a stimulus to rapid maturation of both gut and respiratory epithelium. This matured epithelium may be more resistant to invasion by pathogens or may clear such organisms more efficiently. Another potential mechanism relates to the role of vitamin A in the development and maintenance of immunocompetence. Vitamin A deficiency causes alterations in T cell subsets, impaired phagocytic activity, and reduced antibody response to antigen challenge.

Retinoic acid is an important regulator of gene expression and cell differentiation, and vitamin A deficiency can cause alterations in the balance of Th1 versus Th2 type cytokine response. However, these effects have been observed in animal models and humans after the newborn period.

This study had limitations. The need to maintain control over delivery of the assigned treatment, and the variation in locations and time at which deliveries took place, resulted in a delay in arrival at the place of delivery.Therefore, several children were missed who were born alive and were subsequently moved or whose parents refused participation, or who died before the arrival of the staff. Although there was no difference in survival between the treatment groups before enrollment, the delay prevented estimation of the effect of supplementation on total six month infant mortality.

Conclusion

Supplementing newborn infants with vitamin A can significantly reduce early infant mortality.

BMJ, August 2003.

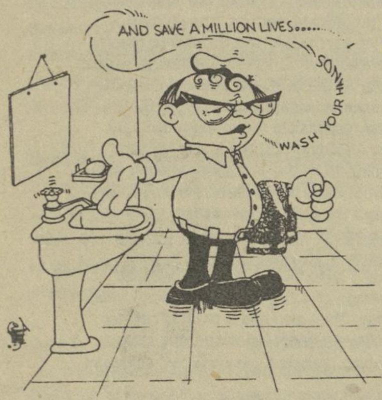
Pill failure linked to obesity

A new study shows obese women are 60 to 70 percent more likely to get pregnant while taking an oral contraceptive than the women of normal weight. This study, is carried out by researchers from the US Fred Hutchinson's Public Health Sciences Division. They compared the weight and body mass indexes(BMI) of 248 women who became pregnant while on the pill to that of 533 women who did not become pregnant while on the pill. No one knows for sure why obese women experience a higher level of birth-control failure. However, they did suggest a couple of possible reasons, including increased metabolism and fairly low hormone levels in today's oral-contraceptives compared with those from 40 years ago. Women who were considered obese, with a BMI of 32.2 or higher, had a 70 percent greater risk. Victoria Holt, Ph D, lead author of the study, says: "The more fat a person has, the more likely the drug is sequestered, or trapped, in the fat, instead of circulating in the bloodstream." Holt makes recommendations that overweight women who have completed childbearing should consider a permanent form of birth control such as sterilization, and overweight women who have not yet completed childbearing should use a backup form of birth control such as condoms while on the pill.

Handwashing - intervention of choice for diarrheal diseases

Handwashing could prevent more than one million deaths a year from diarrheal diseases. A new systematic review that set out to determine the impact of washing hands with soap in the community worldwide concludes that handwashing could reduce the risk of diarrhea by up to 47 per cent.

The authors of the review, from the London School of Hygiene and Tropical Medicine, add: "Although more and more rigorous intervention trials of the health impact of hand washing are badly needed, current evidence shows a clear and consistent pattern. If hand washing with soap could save over a million lives, and if carefully designed hand washing promotion programs can be effective and cost-effective, then hand washing promotion may become an intervention of choice."


AND SAVE A MILLION LIVES.....
SON
WASH YOUR HANDS

"On current evidence, washing hands with soap can reduce the risk of diarrheal diseases around 47 per cent and interventions to promote hand washing might save a million lives. In the absence of adequate mortality studies, we extrapolate the potential number of diarrhea deaths that could be averted by hand washing at about a million," wrote the authors (Lancet Infectious Diseases 2003;3:275-81).

Diarrheal diseases are among the top three killers of children, and the authors say that the most recent published estimate of the total annual death rate from diarrheal diseases is 2.2 million.

The authors of the review set out to identify all studies published in English up to the end of 2002 that related handwashing to the risk of infectious intestinal or diarrheal diseases in the community. They selected 17 (of the 38 papers with relevant content) for inclusion in the meta-analysis and estimated the effect of handwashing on mortality on the basis of published figures.

"Interest in the diarrheal diseases peaked in the 1980s with efforts to promote oral rehydration and improved water supply. Today, they are ranked third as cause of death and second as cause of healthy life years lost due to premature mortality and disability. However, whereas major new initiatives to combat malaria, HIV, and tuberculosis have been announced, interest in research and intervention in the diarrheal diseases has waned," they say in their article.

Although their evidence suggests that the promotion of handwashing with soap in homes in developing countries should become a public health intervention of choice, the authors say much work remains to be done.

E-drug <e-drug@healthnet.org>

Tea good for memory, say scientists

LONDON: Regular tea drinkers may have better memories and could be helping to prevent the development of Alzheimer's disease, according to a British study.

Scientists say laboratory tests have shown that tea inhibits the activity of certain enzymes in the brain.

The findings, which have been published in the academic journal Phytotherapy Research, may lead to the development of a new treatment for Alzheimer's disease — a form of dementia that affects an estimated 10 million people worldwide.

Researchers at Newcastle University's Medicinal Plant Research Centre investigated the properties of coffee and green and black tea in a series of scientific experiments.

They found that both green and black tea inhibited the activity of enzymes associated with the development of Alzheimer's. Coffee had no significant effect.

Both teas inhibited the activity of the enzyme acetylcholinesterase (AChE), which breaks down the chemical messenger, or neurotransmitter, acetylcholine. Alzheimer's is characterized by a drop in acetylcholine.

Green tea and black tea also hinder the activity of the enzyme butyrylcholinesterase (BuChE), which has been discovered in protein deposits found on the brain of patients with Alzheimer's.

Green tea went one step further in that it obstructed the activity of beta-secretase, which plays a role in the production of protein deposits in the brain associated with Alzheimer's disease.

Scientists also found that it continued to have its inhibiting effect for a week, whereas black tea's enzyme-inhibiting properties lasted for only one day.

Lead researcher Dr Ed Okello said: "Although there is no cure for Alzheimer's, tea could potentially be another weapon in the armoury which is used to treat this disease and slow down its development.

Dr Okello said the findings of the research suggested tea could boost the memory of everyday drinkers.—dpa

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BALANCED DIET, HEALTHY LIFE
DIETCARE

Bulletin of
First DietCare Center

Vol. 2 No. 1
January 1998

Taking a closer look at blood-thinning agents

EACH and every organ system, in fact each and every cell of the human body, derives its nutrition from the blood it receives.

Blood, apart from other nutrients, contains oxygen without which life cannot exist. It is basically composed of two components, the fluid (plasma) and the cellular (red, white blood cells and platelets). Normal human physiology demands that blood be in appropriate quantity and quality. Changes in either blood volume or its constituents leads to complications.

In order to maintain homeostasis the cellular (solid) and plasma (fluid) components should stay in appropriate proportions. Any alteration in this ratio leads to pathological states.

Blood must remain in fluid form and must always be in a state of motion (circulation). Sluggish blood flow, stagnation or increase in the cellular component (high viscosity) of the blood leads to clot formation which is enhanced by the presence of a rough surface over the inner lining of blood vessel. Clot (thrombus) formation within a blood vessel, whether venous or arterial, produces serious consequences.

The clinical picture depends upon the organs affected by the respective blood vessel which develops clot inside its lumen. Arterial clots are more serious than the venous ones in terms of clinical consequences.

There are intrinsic body mechanisms which prevent the clustering together of blood cells and platelets. Failure of these mechanisms (natural anti-coagulation) can lead to clot formation. In the situation of a disease, clot formation is managed by the use of anti-coagulant drugs.

Anti-coagulants commonly known as blood shining agents, constitute a crucial group of drugs used in the management and prevention of clot formation in blood vessels of various body parts, including the heart and the brain. Anti-coagulants are divided into various classes depending upon their primary pharmacological actions. They have a wide spectrum of clinical indications and usages.

Their principle action is to minimize the chances of clot formation in susceptible situations and people. They also check the detachment of clot and its embolization to distant organs once it has been formed. Anti-coagulants are widely used in various sub sets of Ischaemic Heart Disease, strokes and peripheral vascular disease.

They are particularly used on long term basis in valvular heart diseases, following valve replacement surgery with prosthetic valves and in chronic arrhythmias. Anti-coagulants are also used as short-term measure in hospitals where they are suppose to be properly monitored under a doctor's supervision.

However, it is the long-term use of anti-coagulants (blood thinners) which needs to be discussed for the benefit of a common man. Blood thinning agents have serious side effects. They are liable to induce bleeding which can be fatal. Therefore their administration needs appropriate dosage to maintain recommended therapeutic blood levels and to avoid over or under anti-coagulation.

Under anti-coagulation undermines the purpose for which blood thinners are used and this can produce thrombo embolic events in pre-disposed situations. While in over anti-coagulation can lead to bleeding both localized as well as systemic.

Therefore once placed on a blood thinning agent, one has to follow the recommended protocol for monitoring its therapeutic efficacy and side effects. There are guidelines available for this purpose.

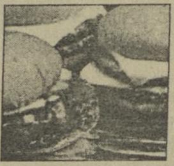
Warfarin sodium is most widely used for long-term anti-coagulation. This is given as once daily dose. Average daily requirement to achieve therapeutic levels ranges between three to 10 mg daily. The therapeutic activity is monitored by a simple lab test called PT (Prothrombinn Time) and an INR of 2.5 — 4 is recommended to maintain the therapeutic range. The target INR varies depending upon the under-lying condition. For example, for prosthetic valve the recommended target INR is 3.5 — 4.

It is the responsibility of the physician to educate the patient on the subject. He must explain the objective of this treatment and that for how long he wants the patient to continue taking it. He must explain the possible side effects and how to monitor those. The importance of P.T/INR values and the possible side effects in the event of abnormal values need to be stressed upon.

A number of drugs can adversely affect the pharmacological action of blood thinners. It is therefore necessary that the physician should go through the prescription and all such drugs interfering with the pharmacology of blood thinning agents be stopped. However, if their use is mandatory then the dosages of either drugs need to be adjusted accordingly.

If proper precautions are adopted, blood thinners can be taken for years, in some cases for life without any serious complications. The long-term use of blood thinners must be clearly indicated. This needs to be monitored through lab tests and regular physicians follow-up visits. This modality of treatment should not be used without due justification and in the absence of proper monitoring. ■

Fast food a cause of obesity and diabetes



FAST food is definitively bad for your health, a 15-year study of people's eating habits has confirmed. The research, published in Lancet medical journal, should bolster the arguments against those in the food industry who claim that the obesity is caused not by what you eat but how little exercise you take. Although burger bars and chippies have been heavily criticised, there has been little real investigation to establish whether there is a link between fast food and the twin scourges of obesity and type 2 diabetes, both of which are soaring in the UK and other affluent nations. The study was carried out by researchers in the US, where obesity is further advanced than it is here - although we are catching up fast. At the turn of the millennium, 30 percent of Americans were clinically obese. The condition is now responsible for an extra 300,000 deaths and costs $100bn (£51bn) in the US per year. Mark Pereira, from the University of Minnesota, and David Ludwig, from the Children's Hospital, in Boston monitored the diets of more than 3,000 black and white adults aged between 18 and 30. They found that over 15 years, those who went more than twice a week to fast food restaurants weighed an average of 4.5kg more than those who went infrequently. They also had a twofold greater increase in insulin resistance, making them more prone to developing diabetes. COURTESY THE GUARDIAN

Salt-loving microbes found in extreme environment

PRIMITIVE bacteria thrive in extremely salty pockets of water at the bottom of the Mediterranean, European researchers report. Their finding, published in the journal Science, adds to the number of extreme environments where life has been found, including extremely hot and cold regions and sulfur springs. This in turn adds to arguments that life could exist outside the Earth, the researchers said. The researchers, led by Paul van der Wielen at the University of Groningen in the Netherlands, found what they describe as abundant colonies of microbes in the ancient salty pockets. Found in the eastern Mediterranean, these relics of 6-million-year-old salty lakes have no oxygen and were thought to have no life. "The Discovery Basin contains a brine that has the highest concentration of magnesium chloride found thus far in a marine environment; such concentrations are considered anathema to life," they wrote. But the team found a wide variety of ancient bacteria and bacteria-like microbes including a class known as archaeobacteria. REUTERS

How to
REALLY RELAX

"Tension is who you think you should be. Relaxation is who you are" – Chinese proverb. Gwen Cheeseman knows how to take it easy.

Don't forget to breathe – when anxious or stressed, our breathing becomes shallow and rapid. This deprives our bodies of oxygen and depletes our energy levels. When happy and relaxed, breathing is naturally slower and deeper. Find a quiet place when things are getting on top of you. Breathe in through your nose as slowly and deeply as you can, allowing your diaphragm to open and your belly to expand. Then exhale slowly through your nose, relaxing your belly. Repeat until you feel calm.

Look into the light – research has shown that blue light calms, de-stresses and even reduces blood pressure. Most of us spend our day under artificial light, as in an office, which contains mostly yellow light and very little blue. To create blue light at home, get a blue light bulb, a blue lampshade or light candles in blue glass holders. Alternatively, just keep the lights dim when you want to relax.

Work it out – if you don't expend excess adrenaline caused by stress it can constantly make you anxious. Work out at the gym, run, swim, walk or play team games. Aim to exercise for at least two hours a week. Divide this up into a little each day and do something you enjoy. If you get bored try something else. Exercise also helps you sleep better.

Tune in – listening to music can have a profound effect on our minds and our emotions, tuning in with the electromagnetic activity in the brain. Sit or lie down in a relaxing place and play your favourite music as often as you can. Singing along helps even more, releasing endorphins (brain chemicals that make us feel uplifted) and promoting relaxation.

Good night – a good night's sleep is essential to a relaxed state of mind. The most important part of sleep is the REM (rapid eye movement) cycle, which first occurs an hour or so after you go to sleep and lasts for around 30 minutes. This cycle repeats, on average, five to seven times a night. At least seven hours' sleep ensures you get enough REM sleep, during which time your brain produces seratonin – the chemical which keeps us happy.

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Spice It Up for Flavor Without Calories

Dr. Sultan Mahmood

Scripps Howard News Service

The food of January is typically spare, coming as it does after the rich fare of December. The sugar plums that danced in our heads are now resting on our hips, and for that we must pay the piper.

Our self-imposed punishment for the wanton gluttony is lettuce-and-tomato salads with fat-free dressing, if any at all; baked boneless, skinless chicken and steamed broccoli with a squeeze of lemon; and low-fat cottage cheese with half a canned peach, not in heavy syrup.

Is it any wonder all resolve is gone by month's end? After letting our taste buds tango, we push them to the sidelines, a bitter end to the festive holiday season. A full-scale revolt can be assured by Valentine's Day.

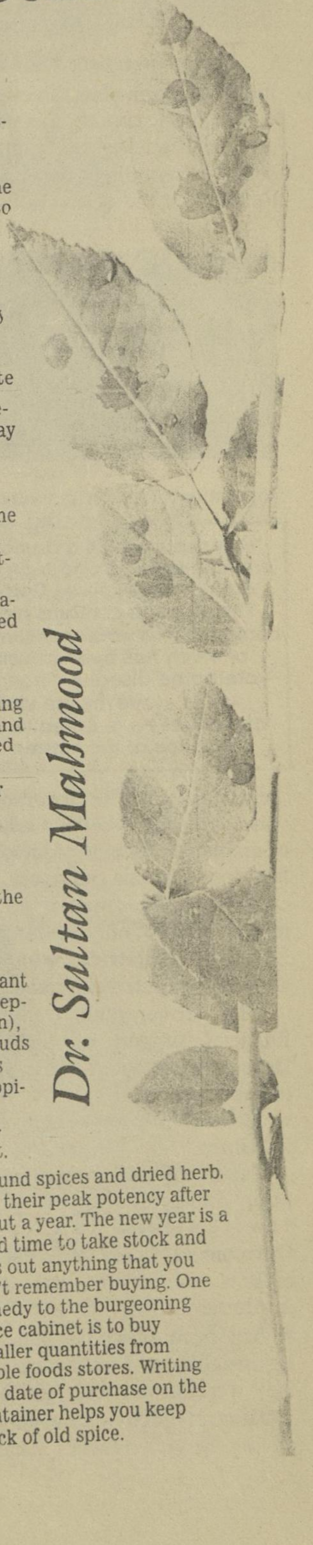
The solution? Go ahead and scale back fat and calories, but pump up the flavor of your food with spices, which are virtually calorie free. Sprinkle nutmeg over sauteed spinach. Add aniseed to steamed carrots. Let cinnamon enhance the sweetness in roasted winter squash.

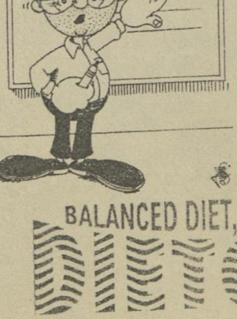
Spices give food complexity and aroma, two things you don't want to deprive yourself of when you're cutting fatty flavor-infusers such as butter and mayonnaise. A whiff of licorice-tinged fennel seed in roasted vegetables or earthy lemon grass in a marinade for fish might be enough to satisfy your craving for something good to eat.

Spices and herbs are different, botanically speaking, and both add depth to food. Generally, herbs are the aromatic leaves of plants, such as basil, oregano and marjoram, that grow in a variety of climates. Spices are derived from a wider range of plant parts including the fruit (cayenne pepper ground from chilis), seed (cumin), roots (turmeric), flower (saffron), buds (cloves) or bark (cinnamon). Spices are usually from plants grown in tropical climates.

Dried herbs, like spices, are available year-round; fresh herbs are not.

Ground spices and dried herb. lose their peak potency after about a year. The new year is a good time to take stock and toss out anything that you can't remember buying. One remedy to the burgeoning spice cabinet is to buy smaller quantities from whole foods stores. Writing the date of purchase on the container helps you keep track of old spice.





First
Centre
Dietcare

BALANCED DIET, HEALTHY LIFE
DIETCARE

Bulletin of
First DietCare Center

Vol. 2 No. 2
February 1998

Water Filtration Plants To Be Installed In Every District.

The environment Ministry will install filtration plants in every district of the country this year to provide clean drinking water to the people. Every plant would cost Rs1 million and at least half of the population of a district would benefit from it. The Government was concerned over the discharge of untreated effluents of factories into drains, canals and rivers.

Official Apathy

Water spurts from a damaged pipeline passing under an open drain in the Railway Colony. The pipeline contains highly contaminated water consumption of which has been causing waterborne disease among the users. However, the civic authorities have failed to take notice of the matter.

The implementation of the WTO regime in 2005, only environment-friendly industries would be allowed to export their products.

The Government, with the financial support of the Asian Development Bank (ADB), would install treatment plants which would treat effluents of at least 500 industries.

It also expressed concern over the poor implementation of the environment laws. The Government would make serious efforts to ensure the strict implementation of the laws. It had been observed that most industrialist used influence when they were served with notices on violation of the environmental laws. Giving the government's stance on the Kahoon valley (Chakwal) issue, it would not give NOC to the owners of the cement factories without confirming that the project was environment friendly. He said public hearing on the issue would be held in Oct. Several Projects both in the public and private sectors were usually launched without carrying out the Environment Impact Assessment. The federal Environment Protection Agency had a wing in every province to monitor their performance. It would also provide financial support to the provinces after analyzing the viability of the projects proposed. Provision of clean drinking water to the people was one of the main priorities of his department. Ozone layer was being depleted due to excessive emission of chemicals like chloro-fluoro-carbons (CFC), halogens and tetrachlorides.

First Dietcare Centre

27.03.14

Scientists raise alarm over exploitation of Pacific tuna

MAJURO: Scientists have sounded the alarm over tuna stocks in the Pacific, warning that some species cannot sustain any further increases in fishing.

Annually just over two million tons of tuna worth around 2.6 billion dollars, around half the world's total tuna catch, are taken out of the Pacific Ocean.

Scientists and researchers told a technical conference here that bigeye and yellowfin tuna were threatened by overfishing.

"Our fishery is the most targeted and important area compared to other oceans," said John Hampton, manager of the Oceanic Fisheries Programme, part of the New Caledonian-headquartered Pacific Community regional aid agency.

"We must prepare for what could happen in light of what's happened in other oceans," he told AFP.

Earlier this year the Tuna Commission, linking fishing nations including China, Japan, Taiwan and South Korea with resource-owning nations such as the 14 Pacific island states, was created with the power to regulate the high seas and 320-kilometre (200-mile) exclusive economic zones.

As part of the commission, to be headquartered in the Federated States of Micronesia, 60 fisheries experts met here this week to present their research on stock assessments.

A report from Hampton tabled at the meeting said bigeye, which comprise six percent of the total Pacific tuna catch, were being overfished "and the current level of exploitation appears not to be sustainable in the long term".—AFP

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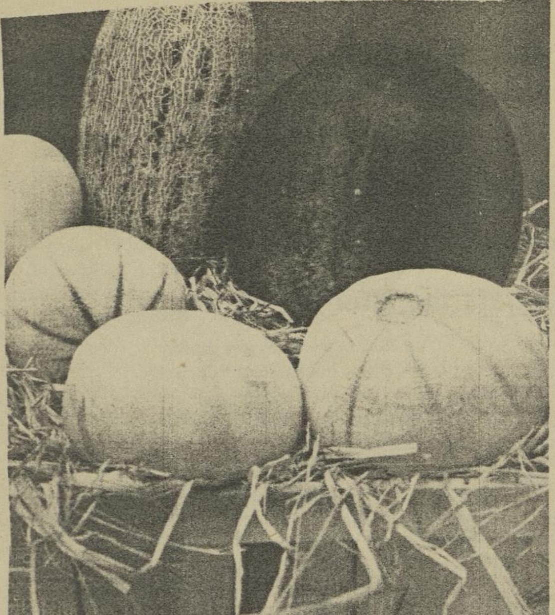


موسمِ گرما کے صحت بخش پھل

گرمی سے جی نہ جلائیے، پھلوں کا استعمال کر کے صحت بنائیے

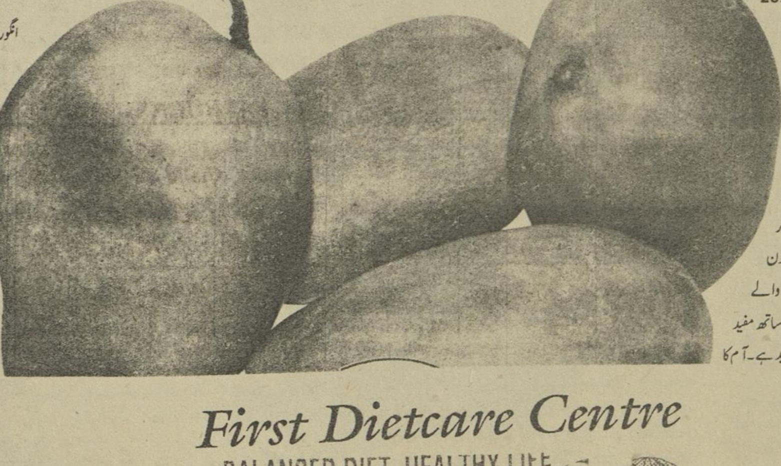
گرمیاں شروع ہوچکی ہیں، اس کے ساتھ ساتھ ہی پھلوں کے بازاروں میں بھی گرمیوں کے پھل دکھائی دینے لگے ہیں۔ ہر موسم اور اس میں پیدا ہونے والے پھلوں میں قدرت نے یہ خاصیت رکھی ہے کہ وہ موسم کے مزاج اور ضرورت کے لحاظ سے انسانوں کے لئے اپنے اندر خاصیت اور غذائیت کا خزانہ رکھتے ہیں۔ لہذا ضروری ہے کہ ہم موسمی پھلوں کو بقدرِ ضرورت استعمال کرتے رہیں، تا کہ ہماری صحت برقرار رہے اور موسم کا اس پر زیادہ اثر نہ ہو۔ ذیل میں ہم موسمِ گرما کے پھلوں، ان کے طبی خواص اور غذائیت کے فوائد کا موسم کے مزاج کے مطابق جائزہ لے رہے ہیں۔

آم

آم کو پھلوں کا بادشاہ بھی کہا جاتا ہے۔ آم سب کی پسند ہے۔ اسے بہت زیادہ پسند کرنے والے کہتے ہیں کہ "آم ہوں اور بہت سے ہوں۔"

آم کثرت سے پایا جانے والا پھل ہے اور اس کی درجنوں اقسام مختلف ناموں سے مشہور ہیں۔ اس حقیقت سے انکار نہیں کیا جاسکتا کہ دنیا بھر میں، آم سب پھلوں میں سب سے زیادہ کھایا جانے والا پھل ہے۔ یہ خوبصورت پھل نشاستہ دار اور روغنی اجزا سے مالا مال ہوتا ہے۔ آم میں وٹامن اے، وٹامین سی، فاسفورس، کیلشیم، پوٹاشیم اور فولاد کے علاوہ مختلف اقسام کے گلوکوز بھی ہوتے ہیں۔

ایک آم میں ان اجز کی مقدار 25 فیصد جبکہ مصفا پانی تقریبا 75 فیصد ہوتا ہے۔ آم دوسرے مفید اور پُر غذائیت پھلوں سے کئی گنا زیادہ غذائیت اپنے اندر رکھتا ہے۔ یہ جسم کو بیش بہا فائدے پہنچاتا ہے۔ اس کے استعمال سے جسمانی کمزوری دور ہوتی ہے، جسم کو فربہ بناتا ہے، خون پیدا کرتا ہے اس لئے نشونما پانے والے بچوں کے لئے خصوصیت کے ساتھ مفید ہے۔ آم کچی صورت میں بھی مفید ہے۔ آم کا اچار پورے سال ہمارے دستر خوان کی زینت بنا رہتا ہے جبکہ کیری سے مختلف چٹنیاں اور مربہ جات بھی بنائے جاتے ہیں۔ اگر گرمیوں کے موسم میں "لُو" لگ جائے تو کیری کا شربت اس میں ایک بہترین دوا ثابت ہوتا ہے۔ اطباء کے مطابق آم کا رس کھانسی اور دمہ کے مریضوں کے لئے مفید ہے۔ عام صورتوں میں یہ دل، دماغ، جگر معدے، گردوں، پٹھوں اور ہڈیوں کو تقویت پہنچاتا ہے۔ دوران حمل آم کا اعتدال میں رہتے ہوئے استعمال، ماں اور بچے دونوں کی صحت پر اچھے اثرات مرتب کرتا ہے۔ آم قبض کشا بھی ہے۔ جگر کے لئے مفید ہے۔ آنتوں اور بواسیر کے مریض بھی اسے استعمال کرسکتے ہیں۔ یہ تیزابیت بھی دور کرتا ہے۔ حکماء نے آم کو بہترین غذا قرار دیا ہے۔ اس سے اعضائے رئیسہ تقویت پاتے ہیں۔ آم کے لئے کہا جاتا ہے کہ اس کا استعمال حافظے کو تقویت بخشتا ہے، دماغ کی کمزوری دور کرتا ہے۔ آم کے درخت کی نرم شاخیں مسواک کے طور پر بھی استعمال کی جاسکتی ہیں۔ اس طرح یہ دانتوں اور مسوڑھوں کے لئے نہایت مفید ہیں۔ کہا جاتا ہے کہ پیٹ بھر آم کھالینے کے بعد دو چار جامن کھالینا چاہئیں، یہ آم کو ہضم کرنے اور صحت پر آم کے ممکنہ منفی تاثیر کو ختم کر دیتا ہے۔



انگور

انگور بھی موسمِ گرما میں پیدا ہونے والا خوش تاثیر اور غذائیت سے پُر پھل ہے۔ انگور کا ذکر قرآن مجید میں بھی موجود ہے اور خود آنحضرت نبی پاک حضرت محمد مصطفیٰ ﷺ نے بھی اس کی تعریف فرمائی ہے۔ یہ خوش شکل اور خوش ذائقہ پھل ہے اور اس کی کئی اقسام ہیں۔ یونانی حکیم انگوروں کی سفید، سرخ اور سیاہ

First Dietcare Centre

BALANCED DIET, HEALTHY LIFE

DIETCARE

Bulletin of
First DietCare Center

Vol. 2 No. 3 March 1998

milky woe

What to do if you love dairy but hate the after effects

A chocolate milk shake, a platter of cheese and an ice cream sundae are favorite treats. But for many of us, they are also dietary no-no's. And not because of their high fat or cholesterol content. Millions of people are lactose intolerant, meaning they lack the enzyme needed to digest dairy, so the very foods that make their taste buds dance make their stomachs scream. According to Sandra Adamson Fryhofer, M.D., an Atlanta-based internist and president of the American College of Physicians, some 50 million Americans are known to be lactose intolerant (and that's not even mentioning the number of undiagnosed cases). The worldwide figures—70 percent of all adults—are even more astounding and beg the question: Is lactose intolerance a new epidemic?

At *Vegetarian Times* we receive hundreds of reader queries about lactose intolerance. Below we answer your most commonly asked questions.

What causes lactose intolerance?

Lactose is the sugar that's found mostly in milk and other dairy products. Once it's consumed but before it can pass into the bloodstream, lactose must be broken down in the small intestine by a naturally occurring enzyme called lactase. Although humans are born with enough lactase to handle an all-milk diet, production of the enzyme can decrease with age, resulting in the condition called lactose intolerance. "Production of lactase is highest from birth to age three or five," says Fryhofer. Only about one-quarter of the population maintains the ability to produce high amounts of lactase after that, she explains. The rest of us experience a marked decrease in the enzyme's production from ages five to 14.

"It's a case of use it or lose it," explains Leslie Bonci, R.D., director of Sports Nutrition at the University of Pittsburgh Medical Center. The less lactose you take in, she says, the less lactase your body produces. (It stands to reason, then, that an infant on an all-milk diet is a lactase-producing machine.) And if you are not producing enough lactase, lactose passes undigested into the large intestine, where it feeds the growth of gas-producing bacteria. These bacteria, in turn, cause the symptoms associated with lactose intolerance (see next question for symptoms).

Although lactose is found mainly in dairy products, it can also be lurking in some unlikely places, like bread, breakfast cereal and even certain prescription and over-the-counter medications. If you're concerned about lactose, read ingredient lists carefully—any food that contains milk, whey, curds, milk by-products, dry milk solids or nonfat dry milk powder also contains lactose. Also, be sure to check with your doctor or pharmacist about any medications you may be taking.

NUTRITION KNOW-HOW

What are the symptoms of lactose intolerance? Is there a test for it?

According to Fryhofer, the most common symptoms are gas, bloating, abdominal pain and diarrhea. Symptoms can occur anywhere from 30 minutes to several hours after eating a food that contains lactose. "If someone is lactose intolerant, they're not necessarily going to notice within an hour," explains Bonci. "There may be a lag time. That's why it's imperative to keep a food log—so you can at least start to put together food and symptoms." Bonci advises her clients to write down what they eat at each meal, then record their symptoms—when they occurred and their severity. She tells them to do this over the course of a week to try to either uncover or rule out a lactose intolerance. "Sometimes you might just have eaten more than usual, or maybe you had a richer meal than you're used to," she says. "Not every case of diarrhea or upset stomach is an indicator of lactose intolerance."

Another factor in lactose intolerance is ethnic background. Certain groups are more prone to the condition than others. "It's quite common among Asians, African-Americans, Jews, Hispanics and Native Americans," says Fryhofer. Although no one can state definitively why this is the case, it seems clear that with these ethnic groups, the body is not producing a sufficient amount of lactase. "But that is not an across-the-board [indicator]," explains Bonci.

If after keeping a log you do suspect that you are lactose intolerant, there are tests your doctor can run to confirm the diagnosis. The most common and reliable is called the hydrogen breath test. Patients drink a dose of lactose and then their breath is checked for hydrogen levels. "Hydrogen is produced by the bacteria in the gut that are feeding on the lactose. A high count of hydrogen in the breath is an indicator that the lactose is not being processed properly," explains Fryhofer.

Even if you are diagnosed as lactose intolerant, it doesn't necessarily mean dairy is completely off limits. "People's responses to food are very individual," says Bonci. One person may have a severe case of lactose intolerance, in which any dairy at all makes them ill, while someone else may be able to tolerate small amounts of milk or cheese. Try scaling back. You might be able to find a level that works for you.

I am lactose intolerant but don't want to give up dairy products. What are my alternatives?

"Just because you may be lactose intolerant doesn't mean that you can't drink milk," says Nadine Pazder, R.D., a nutrition counselor for Morton Plant Hospital in Clearwater, Fla. "It's all about understanding your threshold." First you should try

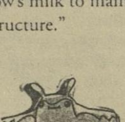
NUTRITION KNOW-HOW

enzyme supplements, such as lactase pills or drops, or to consume milk, cheeses and ice cream in which the lactose has already been broken down by added lactase (check labels). You can also opt for dairy products that don't have a high concentration of lactose, such as aged cheddar or Swiss cheese. According to Elizabeth Ward, M.S., R.D., spokesperson for the American Dietetic Association, some people can eat yogurt without any repercussions because the active cultures break down a great deal of the lactose. But again, it's all about finding your own limits.

Although most people with lactose intolerance can handle some degree of lactose, there are those who can't stomach any dairy products at all. Luckily there are alternatives that are fortified with calcium, taste good and are a rich source of protein, vitamins and minerals. One option is soy milk, which has other benefits as well. "There's so much that's being discovered in terms of the benefits of soy protein," says Bonci. "I don't think there's any doubt that there's a heart disease benefit from it."

"Soy milks and cheeses are easy ways to get soy protein into your diet," adds Pazder. Researchers are also assessing the benefits of isoflavones, compounds found almost exclusively in soy products. "We are feeling quite positive about isoflavones' role in reducing the risk of certain cancers. If you're looking for isoflavones, you're just not going to find them in dairy food," says Bonci. She also points to a recent study in Japan that correlated isoflavone intake and a reduction in bone loss. "How much you need has still not been determined," she explains. "But the fact that there is some benefit is a very compelling argument that one doesn't have to have cow's milk to maintain a strong skeletal structure."

Dairy substitutes have come a long way in terms of taste and texture.



Other popular milk alternatives are almond, oat and rice milks. Read labels to make sure the one you are selecting is calcium-fortified. If you're after the taste and mouth feel of yogurt, soy alternatives are the way to go. They are comparable to dairy yogurt in terms of protein, carbs and calories. Soy cheeses are low in fat and a good substitute for dairy, and, according to Bonci, they've come a long way in terms of taste and product options. Many have the same texture and consistency as regular cheese, but some don't melt as well, so you may want to test them out before using them in a recipe. It's also important to note that soy cheeses and yogurts don't have the same health benefits as soy milk. Although they contain soy protein, the isoflavones are extracted in the processing. Soy milk, which is made from whole soybeans, is the best source of isoflavones.

Sweetened beverages pose health hazard: study

ISLAMABAD: A study has found that consumption of sweetened beverages like soft drinks and fruit drinks has grown at such an alarming rate that it has become one of the causes of obesity and diabetes.

What is even more dangerous according to the researchers is the fact that soft drinks could become a serious health hazard as people often tend to cut down on their intake of nutritional liquids like milk, substituting it with soft drinks instead.

The study was published in the American Journal of Preventive Health. The researchers from the University of North Carolina have revealed that soft drink consumption amongst Americans grew by a shocking 135 per cent in the last 24 years and that people between the age groups of 19-39 are the largest consumers of soft drinks.

The authors of the study are now warning that is a significant contributor to total caloric intake and that soft drink availability in schools and outside should be lessened.

"Extensive research on all age groups has shown that consuming these soft drinks and fruit drinks increases weight gain in children and adults," the report quoted Dr. Barry M Popkin, who co-authored the study as saying. — APP

DINING OUT

EATING OUT (AND EATING AS MUCH AS POSSIBLE!) IS A STRONG LAHORI CHARACTERISTIC. RAMAZAN PARTICULARLY ENHANCES THIS CHARACTER OF THE CITY.

LOOK AT THE FLOURISHING ROADSIDE STALLS, *RAIRHI WALAS* AND THE NOW-RARE MINIVANS, OFFERING THE MOST MOUTH WATERING (ALTHOUGH MAYBE NOT THE MOST HYGIENIC) RANGE OF EATABLES. SWARMING WITH BYSTANDERS AS WELL AS CUSTOMERS, THESE *DHABAS*, ORIGINALLY CONFINED TO OLD LAHORE AND THE 'SLUM' AREAS, PROLIFERATE THROUGH THE ENTIRE CITY DURING RAMAZAN.

SO WHAT IS SO IRRESISTIBLE ABOUT THIS STREET FOOD? WELL, FOR A START, CAN YOU RESIST THE HOT *PAKORAS* (MADE WITH ONIONS, BRINJALS, POTATOES OR SPINACH) AND LUSCIOUS *KHAJOORS*, A MUST-SERVE FOR *IFTAR*? ASK FOR A RANGE OF ARTIFICIALLY SWEETENED (AND COLOURED) COOL *SHARBAT* OR *SIKANJEEN* (LEMONADE), IF A *RAIRHIWALA*, CARRYING THE HUGE RED *MATKA* ON FOUR WHEELS, HAPPENS TO BE IN THE VICINITY. FOLLOW IT BY A CHOICE OF CRISP *SAMOSAS*, ROLLS, *KACHORIS*, *NAMAK PARAS* AND SPICY *DAHI BARAS*, *CHANNA* OR FRUIT *CHAAT*. THE *MITHAI* STALL OFFERS HOT *GULABJAMUNS*, *UNDERSAS*, *JALEBIES* AND A RANGE OF SWEET MEATS MADE FROM *DESI GHEE*.

MOVE ON TO THE MAIN MENU! CHICKEN *KARAHI*, *SEEKH KABABS* AND *TIKKAS* ARE STILL THE HOTTEST SELLING ITEM. HOWEVER, YOU WILL ALSO FIND SOME DELECTABLE 'HOME-MADE' *BIRYANI*, MUTTON *QORMA*, *KAALEY CHANNAEY*, *DAL CHAWAL* AND MIXED *SABZI*.

FIRST
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BALANCED DIET, HEALTHY LIFE
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Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

Bulletin of
First DietCare Center

Vol. 2 No. 4 April 1998

'Let us Eat Right' and 'Let us Get Well'

Diabetes:

Part-II

THE episode made an indelible impression on my mind about the usefulness of a nutritionally rich diet in guarding against disease and promoting well-being and health. However, on account of the non-availability of the 'wonder foods' in Pakistan, I resumed eating in the old, usual fashion, My health with advancing years continued to decline gradually. In the year 1974-75, mental and physical tiredness again raised its head and was soon compounded by a troublesome ringing in the ears (Tinnitus). I sought help from all conceivable quarters but in vain. In the year 1985, to make matters worse, in addition to the above-mentioned disorders I was struck down by an acute attack of arthritis and was immobilized. I sought help, in turn, from reputable practitioners of allopathy, homeopathy and Hikmat, but it was of no avail.

Finally remembering my memorable encounter with nutrition as a means of improving health, I turned towards it with hope and prayer. It was a stroke of good luck that I was able to lay my hand on two outstanding books on the subject: 'Let us Eat Right' and 'Let us Get Well', written by world renowned nutrition consultant, Adelle Davis. These books explicitly describe the role played by nutrients in promoting health and guarding against disease. According to her most of the so-called incurable diseases are, in fact nothing, but deficiency states of specific nutrients. To substantiate her assertion she quotes number of experimental and clinical studies and case histories where disease vanished on the concerned deficiencies being made good and the diet in general being made nutritionally sound in all respects. After saying good-bye to use of allopathic medicines, I embarked on nutritional therapy as advocated in these books. I faithfully followed Adelle Davis's recommendations concerning the diet and supplements and consequently was, in a matter of few months, completely free from the agonizing disorders that had tormented me for more than fifteen years. Besides, I have not been bothered anymore by any of those chronic ailments during the last 17 years or so. I made it a point to offer nutritional advice to one and all, in my circle of relatives and friends whom I found suffering from any health disorder and the outcome invariably was very satisfying.

Convinced that resort to nutritional therapy could stem the tide of rising incidence of horrible degenerative diseases, I resolved to study the subject exhaustively. My daughter-in-law, Dr. Ghazala Majid, while returning from her regular annual visits to her parents in UK, every time brought me handsome number of books and health guides written by eminent persons in the field of nutritional research or practice. Later my son-in-law during his 4 years stay in Washington literally flooded me with latest books on the subject. My son Dr. Asim joined me and as our studies progressed we were astonished to discover that:

*During the last few decades the research in the field of nutritional medicine has gathered considerable momentum. Speaking of this surge in research Dr. Ronald Klatz said, "We know twice as much as we did five years ago and in ten years from now we will have more than five times as much as knowledge as is available to us this day."

*The research scientists have NOT only succeeded in finding natural cures of most of the dreaded diseases but have also been able to resolve the underlying causes of these disorders. The causes are invariably single or multiple deficiencies of essential nutrients, resulting in the malfunctioning of one or more metabolic pathways of the body, the upshot invariably being a disease. The provision of the deficient/missing nutrient restores normalcy to the effected metabolic pathways thus rectifying the cause of the disease. Thus nutritional treatments are not symptomatic but are complete cures invariably accompanied by a remarkable improvement in overall health and vitality.

*Though these natural cures have been substantiated and confirmed by a number of double blind studies and clinical trials, published and reported in many reputed books and journals, yet surprisingly, they are not known to mainstream drug-administering physicians in the English dominated part of the world.

*Nutritional medical literature also abounds with reports from nutritionally oriented physicians, verifying the efficacy of these natural cures. These physicians regard natural nutritional therapies as a 'treatment of choice' for healing various present day maladies. Nutritional medicine, sometimes also called 'alternative medicine' and 'orthomolecular medicine' is being widely practiced in western Europe, particularly in Germany, France, and Italy and in China and Japan. Even in the U.S.A., hundreds of thousands of conventional doctors, after finding that drug therapy does not offer a satisfactory cure of most of the present day diseases, have embraced nutritional medicine.

In the countries referred to in the preceding paragraph, patients and doctors are using these natural substances, i.e., nutrients, with incredible success to succor the sick whom drug therapy could not offer any help, except possibly only symptomatic relief. Regretfully, in Pakistan, many hundreds of thousands of patients are being deprived of a sensible, safe, effective, and relatively inexpensive treatment options because they do not know that such cures exist.

Realizing that the advent of a natural way of healing could make an immense contribution towards preventing sickness, treat the so called incurable diseases and otherwise promote health, we decided to make a humble effort to spread this awareness among the public. This Heath Guide is our first modest effort in that direction. If we find the response positive and the public in a mood to benefit from it, we would in that case bring forth scientifically validated natural cures of other degenerative diseases, such as coronary heart disease, hepatitis 'B' and 'C', rheumatoid arthritis, auto-immune disease, osteo-arthritis, obesity, and so-forth. A Health Guide spelling out 8 different causes of coronary heart disease and their effective natural cures, as established by the latest scientific research, is in the final stages of preparation and shall be published as soon as we are shown a green light by the public.

We sincerely hope and pray that this humble effort will enlighten and benefit the health professionals and the general public alike. It is also our earnest desire and hope that this book inspires the medical professionals to take a keener interest in the nutritional aspect of prevention and cure. Long list of degenerative diseases are becoming epidemic for which allopathic medicine offers, at best, only a symptomatic relief and no cure. It is imperative, therefore, that medical practitioners avail themselves of scientifically and clinically validated nutritional cures. The recourse to nutritional prevention and

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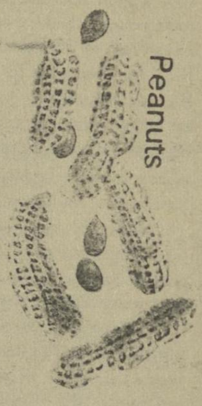

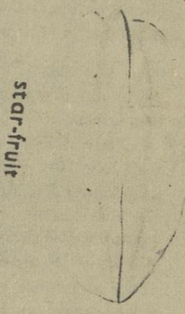

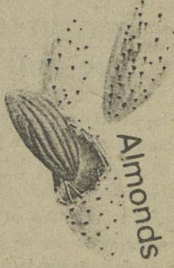

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cure shall serve to alleviate needless suffering, which would be a truly monumental service to the ailing humanity. It is, therefore, critically essential for all healthcare and allied professionals to approach this exciting and vast reservoir of knowledge with an inquisitive and an open mind and devote at least some part of their time and energy to gain this valuable expertise.

Prevention is better than cure. Allopathy, however, only caters for needs of diseases. It has nothing in its armory of drugs to preserve health against the onslaught of current killer diseases. Carlton Fredricks very aptly expresses this limitation of drug therapy in these words:

"Our allopathic system of medicine recognizes disease only when it has reached crisis proportions. This is tantamount to saying that fire is only a fire when it bursts through the roof, when in actuality it was a fire when the cigarette butt began to smolder in the rug."

On the contrary, in nutritional medicine, admittedly it is more important to harness the preventive potential of a nutritionally sound diet than that of nutritional healing, if we are to stem the rising tide of killer diseases. Prevention must be given a preference to keep the incidence of disease down.

Allopathy by its very nature, places its entire reliance on treatment of diseases rather than on their prevention, largely because its finds itself unable to contribute anything to prevention.

It would certainly be a commendable act of public service if the potential of diet and nutritional supplements as dependable instruments for the prevention and treatment of killer diseases is made known to the public at large.

It is, however, a gigantic task, multi-dimensional in nature, that calls for the collective efforts of one and all, who can help advance its realization in some aspect or the other. For instance, we often hear on world health days, celebrated so regularly to create awareness of various killer diseases, the need for adhering to a balanced diet. But regretfully, no one has to this day delineated exactly what this balanced diet is in Pakistani context, and where it is available. Certainly, there is no dearth of knowledgeable persons in the country, who are well informed of the havoc that refining and processing has played with the nutritional contents of various foods, turning them into nothingness nutritionally, and in some cases making them out rightly health-hazardous. Motivated by the spirit of public service, such persons should come forward and pass on this knowledge to the general public at large that they may confine themselves to eating healthy, nutritionally loaded, wholesome foods in their natural form and avoid debased foods.

The press and the electronic media, moved again by the same spirit of public service, could help these informed persons to share their valuable health promoting knowledge with the public. Some altruistic entrepreneurs, on being informed may so change their refining and processing operations, so as to retain the original natural form of all the nutrients without any loss of any of its contents.

Health professionals, motivated by the spirit of service to ailing humanity, could, by embracing nutritional therapy, as done by many of their comrades in other countries, advance and update their quality of services to improve and better protect national health.

The Government could help:

*By setting up prestigious institutions devoted to turn out health professionals fully conversant with the latest advances in the field of nutritional medicine. The syllabus of present Nutrition degree courses in some institutions in the country, does not cover therapeutic application of nutrients . This should be rectified.

*By undertaking a vigorous programme of dissemination pf nutritional information designed to prevent the people falling an easy prey to the present onslaught of degenerative diseases.

*By making easily available in the country numerous high quality nutrients (vitamins, minerals, amino-acids, enzymes, herbs and other accessory nutrients) which have been established to be effective, in preventing and curing many disease states, by the scientists at world renowned institutions and have been published in prestigious journals. From the point of view of quality and reliability Germany, at present, is the preferred source because there these natural substances have been approved for clinical application, only after they have gone through numerous scientific studies and clinical trials. In Germany quality of these nutrients is also controlled by a Commission appointed for the purpose by the Government.

*Pakistani owned pharmaceutical companies could render valuable service to the nation by acquiring latest up-to-date know how involved in the preparation of quality nutritional medicines, currently only available from abroad, and making them available in the country at reasonable rates.

All this and much could and should be done, if we are going to stem the rising tide of these killer diseases. Everyone who can contribute in some manner or the other in this fight against disease must come forward to discharge his obligation to his countrymen and humanity at large. Ameen.

KINDS OF DIABETES

There are two main kinds of diabetes. They are so different in there causation that they are probably two different diseases.

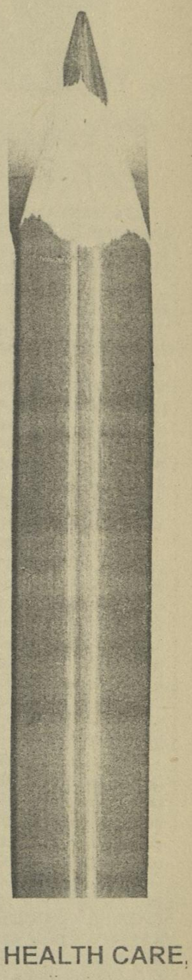
JUVENILE DIABETES ALSO CALLED TYPE-I OR INSULIN DEPENDANT DIABETES (IDD): This usually strikes children and adolescents as a rather acute illness. In addition to the rapid onset of dehydration, unexplained weight loss, increased thirst and excessive urinary output, the diagnosis is easily made by the high sugar level in the blood and urine, combined by the low or absent level of insulin In the blood. In other words, insulin-producing cells of the pancreas are not producing enough insulin to maintain normal blood sugar level.

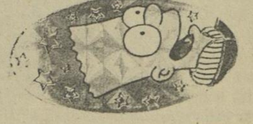
ADULT ONSET DIABETES, ALSO KNOWN AS TYPE-II OR NON-INSULIN DEPENDANT DIABETES: In this type of diabetes the pancreas continues to manufacture insulin sometimes at an even higher than normal level, but cells do not respond appropriately to insulin, the body having developed resistance to its effects.

THESE TWO FORMS OF DIABETES ARE SO DIFFERENT IN THEIR CAUSATION, THAT LOGICALLY, IT WOULD BE MORE APPROPRIATE FOR THE PURPOSE OF TREATMENT AND CURE, TO CONSIDER EACH OF THEM SEPARATELY. These two forms of diabetes, although they display similar symptoms, but in fact, are quite different in their causation. As such, it is quite logical to consider them as two different diseases for the purpose of treatment and cure. So we shall consider each one of them in turn, starting with Type-II, as the overwhelming majority of diabetics are in fact afflicted by this form of disease.

SYMPTOMS OF ADULT ONSET (TYPE-II) DIABETES:: In Type-II diabetes, (Non-Insulin Dependant Diabetes) the pancreas continues to manufacture insulin, often even at higher than normal levels. However, the body develops resistance to its effects. In other words, the body is unable to use insulin efficiently.

(To be continued)





BALANCED DIET, HEALTHY LIFE
DIETCARE

Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com. Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

Bulletin of
First DietCare Center

Vol. 2 No. 5 May 1998

Cont.... p:13

EAT RIGHT

As a result, though there is a relatively high level of insulin circulating in the blood, yet at the same time the blood sugar levels are very high.

The sugar disorder is not a defect in the pancreas, as in the juvenile (Type-I) diabetes, but in the insulin receptors. A shortage in insulin receptors (sites on the body cells where the interaction of insulin and glucose occurs), allows a high level of insulin to be present in the blood yet not working normally to escort the glucose into the cells for the production of energy.

CAUSES - ACCORDING TO CONVENTIONAL MEDICAL WISDOM:

The mainstream medicine only touches in passing the causes of Type-II diabetes. They hold that it is often hereditary, in that, it travels in the families. Other less common causes of diabetes-II, according to them are high levels of corticoisteroids, some drugs and poisons that interfere with the production or the effects of insulin resulting in high blood pressure.

They also hold obesity as a risk factor for type-II diabetes. In rare cases, the cause might be auto-immune damage to insulin producing cells of the pancreas and the adult onset patient, in that case, would not be producing adequate insulin to control his blood sugar levels.

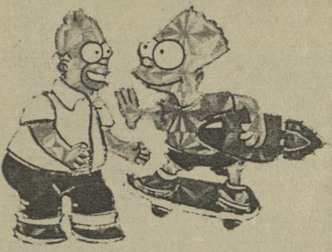
CAUSES - ACCORDING TO NUTRITIONAL MEDICAL RESEARCH:

Adult onset or Type-II diabetes that comes on in adult hood develops not from lack of insulin but from excess of it.

The majority of type-II diabetics, especially those with heart disease, high blood pressure, elevated cholesterol, or obesity in their families, have inherited a tendency for the insulin sensors on the cell to malfunction with age, illness, stress, or from an assault by years of high sugar and starch consumption. As the sensors become.sluggish, the condition of insulin resistance develops. Because it is crucial to get the sugar out of the blood and into the cells, the pancreas compensates by making more and more insulin to keep the system going. Finally some people become so resistant to insulin that the amount necessary to make the sensors respond and clear the sugar from the blood is more than their pancreas can make; that person becomes an adult diabetic.

PREDISPOSING FACTORS OF TYPE-II DIABETES

In the words of Dr Micheal Eades, MD and Dr Mary Dan Eades, MD in their book "PROTEIN POWER":



"In childhood the insulin-blood sugar regulation mechanism works perfectly, when you are a kid and you eat ice cream or drink soda loaded with sugar, your blood sugar starts to rise and your pancreas releases a little insulin which drives blood sugar back down promptly. The pancreas releases just a small amount of insulin to force the blood sugar back down to normal because in childhood the cells are extremely sensitive to insulin. And due to this delicate sensitivity a small amount of insulin easily handles even the outrageous amounts of sugar and other.carbohydrates that kids stuff themselves with but - NOT without a price."

"The price is developing a loss of sensitivity of the sensors to insulin - a condition known as INSULIN RESISTANCE and chronically elevated insulin levels (HYPER-INSULINEMA)."

Not So 'Rosy' After All?

By Ayesha Khan

There's nothing better than a glass of plain water to quench your thirst. We all know that, but there's nothing more boring than a glass of water. Now with Ramazan around the corner, how many of you are looking forward to opening your fast with a rosewater drink? But all is not as 'rosy' as it seems.

Originally, rose-based drinks primarily contained natural plant extracts and sweeteners like natural sucrose, fructose, glucose and pigments procured from natural sources. Gradually, manufacturers have adopted the practice of adding artificial colouring, flavour enhancers and artificial sweeteners. The result is that most mass produced rosewater drinks have hardly any nutritive value. The calories they provide are 'empty' (they do not provide energy), and a standard glass of rosewater (250 ml) provides approximately 170 calories, which is nearly as much as those contained in a can of fizzy drink.

Also, although the colouring used in these drinks is mostly approved by the Food and Drug Administration, it is essential that their presence is clearly labelled on the bottles. Colours like red #40 *(allura red)* and yellow #5 *(tartrazine)* can cause allergic reactions, such as nasal congestion and inflammation of the throat lining.

So does this mean no rosewater drinks this Ramazan? No, it just means that you need to remember the golden principle of moderation. If rosewater drinks are not taken too frequently, they will not have an adverse effect. The better option would be to drink freshly extracted juices, fresh fruit shakes or *lassi* (sources of energy and nutrition). But if you can't resist opening every fast with a rosewater drink, try improvising by adding milk to boost your nutritional intake. ■

The writer is dietician/nutritionist at the Doctor's Hospital and Medical Centre, Lahore.

Fact file

The government identified smoking as one of the country's leading causes of morbidity and mortality in its December 1997 health policy.

According to Pakistan Paediatric Association, 1,000 to 1,200 children between the ages of 6 and 16 years take up smoking every day.

29 per cent of men and 3.4 per cent of women smoke cigarettes regularly, concluded the National Health Survey, while the Pakistan Society of Cancer Prevention says 37 per cent of men and 4 per cent of women over 15 years of age are smokers.

Cigarette consumption in Pakistan is five times higher than in India with 564 cigarettes per adult per annum against 129 for India. This in itself poses a long-term threat to the health of Pakistan's population, and imposes a greater burden on our health services.

Tobacco kills 4.9 million people worldwide, every year and about 500 million people alive today will eventually be killed by it. More than half of these are now children and teenagers.

By 2030, tobacco is expected to be the single biggest cause of premature deaths, accounting for more than 10 million deaths per year. Any country which introduces tobacco control measures stands to achieve better health for its people and is likely to face less disease burden. In Pakistan alone it kills 100,000 people annually.

On one hand the worldwide tobacco crop is worth $20 billion to growers and is a source of foreign exchange for some tobacco-exporting countries and the sales of tobacco products among the three largest multinational manufacturers amounts to more than $100 billion per year (1999) but on the other hand this revenue translates into an increase in the tobacco consumption and tobacco related deaths which now stand at 4.9 million per year from the original figure of 4 million in the 1990s.

The financial burden of these premature deaths weighs far more than the earnings from the tobacco business.

The Voluntary Health Association of India estimates that tobacco-related illness costs the country (population 1 billion) $11 billion a year in public health costs. In the small country of Costa Rica (population 3 million), smoking related illnesses costs the social security system an estimated $534 million per year

— *NA*

A Pea for all Seasons

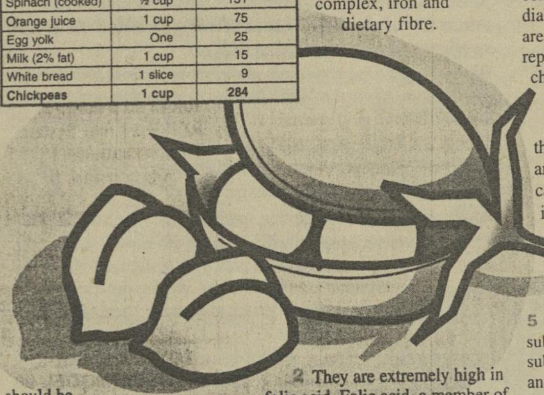
By Prof. Dr. Rashida Ali

Ramazan is around the corner and chickpeas will become a regular part of our diet during *Iftar* in the form of *chaat* and *pakoras*. However, these beans are so nutritious, economical and delicious that they should be consumed frequently throughout the year.

Chickpeas, scientifically known as *cicer arietinum*, locally called *channas*, are technically hard-shelled fruits, belonging to the group of legumes which includes nuts and seeds. The *leguminaceae* is a large family of more than 11,000 species and provides double the amount of protein than grains. Well-known legumes in our daily diet are peas, beans (soya, *lobia*), peanuts, lentils and nuts.

Table 1

Food	Quantity	Folic acid mcg
Beef liver	3.5 oz	220
Peas (black eyed)	1 cup	210
Yeast	¼ oz	164
Spinach (cooked)	½ cup	131
Orange juice	1 cup	75
Egg yolk	One	25
Milk (2% fat)	1 cup	15
White bread	1 slice	9
Chickpeas	1 cup	284



The health benefits of chickpeas are as follows:

1 They are an excellent source of Vitamin B complex, iron and dietary fibre.

2 They are extremely high in folic acid. Folic acid, a member of the Vitamin B-complex family, is essential in forming red and white blood cells in bone marrow. It is also responsible for many other vital functions of the body and recently, its RDA (recommended daily allowance) has been doubled, especially for children, who now require as much as adults i.e. 400 mcg (microgram). Folic acid is highly recommended before and during pregnancy to avoid complications at birth. (Please refer to **Table 1** for a comparison of foods, rich in folic acid).

3 Chickpeas also contain reasonable amounts of soluble dietary fibre, which have been identified as cholesterol lowering compounds in the blood. Heart, diabetic and hypertensive patients are therefore often advised to replace meat and eggs with chickpeas.

4 The caloric value of chickpeas is high because they contain slightly higher amounts of fat and carbohydrates. However, the fat is unsaturated making them the richest source of dietary fibre and protein compared to other beans and peas.

5 Chickpeas are good meat substitutes as they provide a substantial amount of protein, and are also healthier, since unlike meat, they do not consist of fat in large amounts and are a rich source of potassium and other minerals. ■

The writer is Consultant, H.E.J. Research Institute of Chemistry, University of Karachi.

Nutritional FACTS

Nutrition Facts

Chickpeas 1/2 cup cooked (about 100g)

Kcal	135
Carbohydrate	23 mg
Total Fat	2.1 g
Saturated Fat	0.2 g
Monounsaturated Fat	0.5 g
Polyunsaturated Fat	1 g
Dietary Fibre	6.2 g
Cholesterol	0 mg
Sodium	6 mg
Manganese	0.8 mg
Copper	0.3 mg
Phosphorus	138 mg

Chickpea and Tomato Toss

Ingredients

- One can (20 ounces) of chickpeas
- One large tomato (thinly sliced)
- Three chopped whole onions (thinly sliced)
- Two tablespoons of vegetable oil
- One tablespoon lemon juice
- One teaspoon ground cumin
- Half teaspoon of chilli powder
- Quarter teaspoon of salt
- Freshly ground pepper

Directions:

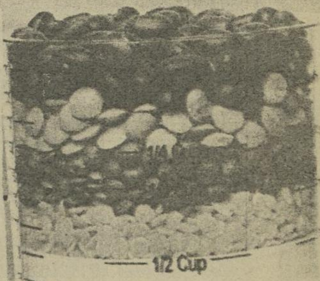
1 Rinse and drain the chickpeas and place them in a bowl.

2 Add the tomatoes and onions.

3 Whisk remaining ingredients together.

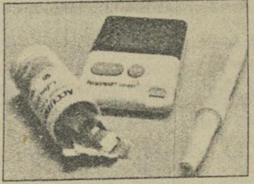
4 Toss with chickpea mixture until coated.

5 Sprinkle with freshly ground pepper and serve straight away.



Pregnancy can go well for women with diabetes

Daily Times
10-01-05



WOMEN with type 1 diabetes who monitor their blood glucose daily both before and during pregnancy have better outcomes, Danish researchers report.

In the largest study to date of pregnant women with type 1 diabetes, Dr Dorte M Jensen of Odense University Hospital and colleagues found that only one-third of women said they monitored their blood sugar levels every day around the time they conceived. Daily monitoring and good overall control of blood glucose levels were associated with a lower likelihood of infant mortality and birth defects. The study is published in the medical journal Diabetes Care.

Specifically, the researchers compared rates of pregnancy complications in the general population with rates for 1,218 consecutive pregnancies in 990 women who had type 1 diabetes. Among the women with diabetes, compared with the general population, the percentage of babies that died soon after birth was higher (3.1 percent vs 0.75 percent), as was the rate of stillbirths (2.1 percent vs 0.45 percent) and birth defects (5.0 percent vs. 2.8 percent).

Among the 93 diabetic women who had serious adverse outcomes - meaning babies that died or had malformations - 22 percent monitored their blood glucose daily at conception, compared to 35 percent of the women who had uncomplicated pregnancies. Also, blood sugar control before and during pregnancy was not as good among the adverse outcome group, on average, and they were less likely to have received pre-conception guidance than the women without seriously affected babies. REUTERS

Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com. Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

BALANCED DIET, HEALTHY LIFE
DIETCARE

The Ageless Disorder

By Dr. Jawed Usman

Arthritis and other diseases that affect the muscular-skeletal system are common and can occur in men and women of all ages. They account for 20% of general practitioner consultations. Recent advances in laboratory testing and imaging have improved our understanding and evaluation of these conditions.

Arthritis involves the inflammation of one or more joints and the breakdown of cartilage (which protects your joints by enabling smooth movement). Cartilage also absorbs shock when pressure is applied on the joint (walking or carrying weights). Without the normal amount of cartilage, the bones rub together and the absence of lubrication causes pain, swelling and stiffness.

Initial symptoms associated with arthritis are often confusing and most people opt for self-medication. Hence, it is important to recognise the signs and understand the process. There are many unfounded misconceptions about arthritis, such as 'it is an old person's disease', 'it is induced by a cold, wet climate', 'it is caused by a poor diet' and 'it has a complete cure'. There are also many treatment options. Since individual response to a specific medication can vary and side effects are also a factor, finding the most effective medication can be a difficult process.

Nonsteroidal anti-inflammatory drugs are among the most commonly prescribed. Three types exist: *Salicylates* (aspirin), *NSAIDS* (diclofenac, flurbiprofen, ibuprofen), and *COX-2* (inhibitors).

Disease modifying anti-rheumatic drugs can also stop the progress of the disease. Research has shown the effectiveness of these drugs in the treatment of rheumatoid arthritis. These include *methotrexate, leflunomide, penicillamine,* and *azathioprine. Glucocorticoids,* often referred to as corticosteroids, are very potent and can reduce swelling and inflammation quickly.

Biologic response modifiers stimulate or restore the ability of the immune system to fight disease or infection and are derived from living sources as opposed to being synthesised chemicals. *Etanercept, Remicade* and *Kineret* are examples of modifiers. They interfere with inflammatory activity and ultimately decrease joint damage.

Analgesics are pain-relieving medications. Controlling pain is a vital part of treating arthritis. One of the most commonly used is *paracetamol.* Narcotic analgesics, such as *hydrocodone,* and *tramadol,* can be prescribed. Topical analgesics also exist, such as cream and gel.

Minimising arthritis is a major challenge. Ideally, any disease should be approached at a preventive level rather than by using 'pills and operations'. And there is good observational data that suggests that lifestyle changes (more physical activity) decrease the incidence and progression of these disorders. However, arthritis cannot be completely prevented and hence, the focus remains on how to deal with the disease once it strikes. ■

The writer is Chairman of the Department of Family Medicine, at Ziauddin Medical University, Karachi.

Enzyme that aids HIV replication revealed:

[Health India]: Washington, Oct 30: In a breakthrough discovery, scientists from the National Institute of Allergy and Infectious Diseases (NIAID) and the McGill University AIDS Center have discovered a cellular enzyme that helps ferry HIV genetic instructions out of the cell nucleus where they can then be translated into proteins.

Led by Kuan-Teh Jeang, the research team found evidence that the virus co-opts an enzyme produced by human cells to transport HIV's genetic material out of the cell nucleus. Once out of the nucleus, these messenger RNAs begin directing the cell to create and assemble new virus particles.

"Unspliced RNA is like an unwieldy ball of yarn. We found that the virus also uses a human enzyme known as DDX3 to straighten its RNA before threading it through a small pore in the nucleus," Jeang said.

The team's experiments offer the first evidence that HIV uses DDX3, a human RNA helicase enzyme in the complex process that moves its RNA out of the nucleus and is essential to this process. (ANI)

Glug! You may be drinking too much ... water

It's become a popular health mantra: Drink a lot — a lot — of water. But, says Dr. Judith Reichman, too much is not a good thing

Q: I've heard you should drink eight glasses of water a day. This seems like a lot. Is it really necessary?

A: No. Water is essential, but there's no need to mega-water our bodies.

The body has a built-in way of controlling hydration and telling us how much we should drink. It's called thirst.

An extensive review, published recently in the American Journal of Physiology, could not find medical evidence to support a need for those eight glasses a day. Drinking large amounts of water will not curb your hunger, "flush" away toxins or make your skin look moist and dewy. (Your skin will look dry if you become medically dehydrated, but no one is telling you to stop fluid intake. You will become thirsty long before you become dehydrated.)

In fact, there are good reasons not to force yourself to drink too much water. Over-hydration can lead to wetting accidents as your overfilled bladder contracts before you reach the bathroom.

And if you imbibe faster than your kidneys can process, you risk dilution of electrolytes and water intoxication, causing confusion and coma.

If you exercise strenuously, you should drink enough to make up for the sweating and energy expenditure that will follow. Feel free to drink a glass or two before you become thirsty, but don't overload. If you are in the hot sun or extreme heat, you should also increase your fluid intake.

But under normal circumstances, you needn't walk around with a designer bottle of water, gulping down more than you need to quench your thirst.

Dr. Reichman's Bottom Line: Drink when you are thirsty. The dictum to drink eight glasses a day just doesn't hold water.

Packaged food technology

ADULTERATION in milk, beverages, oil, ghee, spices, flour and other food products has assumed massive proportions in the country. It has indeed become a full-time business, with those involved in it being least concerned with the severe health risks they are passing on to consumers.

According to the food department, adulterated eatables are commonly being provided throughout the country and especially in big cities. A district government found 90 per cent of milk samples to be adulterated with large quantity of unhygienic and often untreated water, whereas beverages and fruit juices sold in loose form are also included in the list of adulterated items. Even fake beverage bottles of international brands are available in the market.

Apart from adulteration in food items, other items of low quality are being provided in the market for sale. Again according to the food department, the business of producing and selling adulterated spices, confectionery, honey and bakery items is thriving. Out of some 24,244 samples of various food items, 11,832 were found to be adulterated. The main cause of the rise in adulteration is that existing laws are not being implemented and the concerned authorities seems to be least interested in checking the menace.

Recently, however, the federal cabinet recommended death penalty for adulteration. The federal government has decided to establish special courts to try the cases of adulteration in food items and medicines and in case proof was found, rigorous imprisonment of up to 25 years and a fine of up to Rs1 million may be awarded to the offender.

While the government plans and executes its own policy, the consumers can both protect themselves against adulterated items and hasten the end of this illegal and immoral activity by preferring to buy food and beverage items in sealed packing. Packaged food can be kept safely for a much longer period and it eliminates the possibility of adulteration and the presence of disease casing organisms.

On the face of it, packaged food may seem to be more expensive than loose supplied food. But the difference is indeed a small price to pay when the serious health risks associated with loose food items is concerned. Risks that spell all sorts of diseases and even fatality. This is especially true for milk which is consumed in every household. Packaged milk is 'ultra heat treated' that ensures all bacteria and disease causing organisms are killed. Loose milk is not only adulterated with water of dubious quality, it is also exposed to dust and light, both of which cause rapid deterioration.

Thus by opting for packaged milk, juices and other food items, consumers not only save their health, they also hopefully putting an end to adulteration altogether in the long run.

There are many arguments in favour of the aseptic technology, which ensures that at the crucial post-production packing stage, food items are handled hygienically. Secondly, we know that all food deteriorates when exposed to the air and UV (ultra violet) light. Packaged food cartons being air tight and impermeable to light, protect the packed item from deterioration caused by the elements. What is more, such protection is for up to six months at room temperature, eliminating the need for costly refrigeration.

Unlike other packaging materials like plastic or glass, packaged food cartons are also environment-friendly. Cartons are easily recyclable to produce a variety of goods of daily use. For example, tissue boxes, kitchen and toilet rolls and even a type of chipboard, which can be used to make litter bins and furniture.

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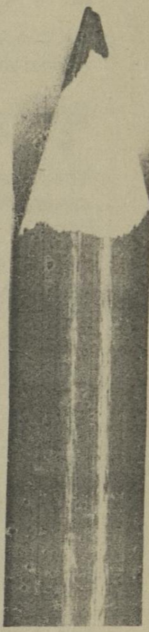
BALANCED DIET, HEALTHY LIFE
DIETCARE

Treatments of endometriosis



Q A day or so before a menstrual period, I have terrible cramps and pain in my lower abdomen. My periods have been very heavy. I would like you to tell me what your opinion of all this is.

A You make a good case for endometriosis, but a reliable diagnosis will come only from a doctor examining you and ordering the appropriate tests.

The endometrium is the lining of the uterus. In endometriosis, bits of the lining have been transported to distant places: the ovaries, pelvic ligaments and even places as far away as the lungs and rectum. Those transplants react to the monthly surge of oestrogen just as the endometrium in the uterus does. That accounts for the pain of endometriosis.

Sometimes the symptoms are so classic that a doctor can make the diagnosis based on them alone. The diagnosis, however, is clinched by taking a peek into the pelvis, and often that can be done with a scope inserted through a small incision.

The birth control pill is frequently used to control this relatively common condition. The idea is to create an environment in which oestrogen is at low levels so the endometrial transplants shrivel. Two other medicines, Synarel and Lupron, can also lessen oestrogen production and are useful treatment drugs.

Surgical removal of the transplanted tissue is another way of dealing with the problem. Often that can be done with the same kind of scope used to peer into the pelvis to inspect it for endometrial transplants.

Q I have a patch of skin near my right elbow that itches nonstop. This has been going on for more than a month, and I have used several itch creams recommended by my pharmacist. None has worked. My doctor thinks it could be related to food. Is this a usual sign of food allergy?

A I am sure your doctor was not talking about food allergy. He has something else in mind — dermatitis herpetiformis (in spite of the name, it has nothing to do with the herpes simplex virus.). It's a skin eruption that takes many forms but often presents as an island of tiny blisters on a red base. It creates an intense itch. The rash might clear up for a time, but it almost always returns and is as intensely itchy each time it comes around.

Dermatitis herpetiformis usually responds to oral medicines. Dapsone is the one commonly prescribed.

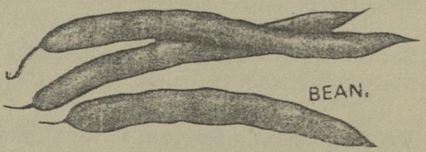
The food link involves gluten, a protein found in wheat, barley and rye. Intolerance to those grains can bring on dermatitis herpetiformis. More commonly, intolerance to gluten —— celiac disease causes diarrheoa and weight loss, but the skin manifestation can spring up on its own —— without any digestive tract symptoms.

A diet that completely excludes gluten usually effects a cure for those with celiac disease. The same diet can also bring dermatitis herpetiformis under control. That's the reference your doctor made to food.

Q I had blood in my urine, and the source of it was traced to bladder cancer. A urologist removed the bladder tumors through a scope. He now wants me to have BCG treatments. A nurse friend told me this is used to vaccinate against TB. How does it help bladder cancer?

A BCG is a tuberculosis vaccine used in many parts of the world, but not often in North America for vaccine purposes.

The BCG germ in the vaccine is a relative of the TB germ. For some bladder cancers, BCG in solution is instilled into the bladder to bathe its walls, the site of bladder cancer. It stimulates bladder immunity to cancer cells. It has been shown to lessen the chances for bladder cancer, recurrence, and it has also been shown to reduce deaths from bladder cancer. ■



Indulging in the Deep-Fried Fasting Regime

If you are under the impression that the month of Ramazan is meant to be slow or sleepy, it's time to think otherwise. The reality is that our cities experience a unique culture when observing Ramazan. They spring to life with a renewed vibrancy, while its citizens observe not just a spiritual awakening, but indulge in full-blown celebrations and festivities, which usually means food, food and more *food* - a paradox, right?

Ramazan works to a different schedule. The working day is cut in half, which means an afternoon of dozing and preparing for an evening of food gorging. Real activity begins around sunset. Restaurants, food joints and street *thelas* start bustling with people. Patience levels are low and blood pressures high.

Shopping areas, street corners and public places are heavily encroached by '*samosa walas*', '*jalebi walas*' 'juice *walas*' and all other food *walas* one can possibly imagine. Swirling *jalebis*, coral-like *pakoras*, triangular *samosas*... the streets take on an aromatic fragrance, a pleasant change from the sewerage fumes we are accustomed to.

Moving away from roadside *thelas* and stepping into fancy restaurants, we see fabulous deals on the menus - all you can eat pizza, two *deghs* of *nihari* for the price of one, *halwa puri* with extra pickles ... Five star hotels jump on the bandwagon and boast extravagant buffets at not so extravagant prices.

This celebratory mood continues into the night, which becomes a time for prayer, spiritual realisation, cricket matches and food fests. Nightlife comes to an end with the first rays of the sun, with people eventually retiring only to re-emerge again at *iftari* time for another round of the same. ■

Corporate farming and food security

AT a time when Pakistan's food security is confronted with a crises, meeting the people's food needs becoming more expensive and when social scientists and human rights groups are clamouring for an end to feudalism, the government seems all set for ushering in corporate farming.

The policy for promoting corporate farming has been on the official agenda for the last four year. It is now reported to have reached implementation stage. The latest report is that some companies are starting operations and have also obtained loans from commercial banks.

The national bill for food imports has crossed $2 billion a years. The failure of last year's wheat crop to meet domestic needs has further escalated the cost and the policy of importing sugar and urea even though Pakistan's produce should be sufficient if it is properly managed. In the worst scenario, it could be marginally short.

The situation may actually aggravate if, instead of providing all out support to the agriculture sector to meet the country's needs rather than placing farmlands on the auction block. Commercialization of agriculture and concern for food security may not be compatible.

Ostensibly and academically, the government is providing all out support to the farming sector. Some of the salient and extensively publicized features of the official policy for the agriculture sector are: President's package for farmers of June 10, last year; the programme for brick lining of canals; increase in loans to the farmers, mechanization of the farming sector and promotion of conservation technologies. But the 'incentives' it offers to farmers are not even fraction of what is being made available to investors in other sectors.

The government's efforts for building water reservoirs also belong to the same list though it is a perturbing question as to how the administration proposes to resolve a controversial issue within the country when it cannot come up with resolve, foresight and a firm policy to counter usurpation of Pakistan's waters by India that is being done by the neighbouring country.

A reference has been made here because of extra pressure on dwindling water resources that is inherent in any move to extend cultivable land. The government, it is learnt, has earmarked about nine million hectares considered suitable for corporate farming. Maximum land, over 4.5 m hectares is said to be in Balochistan, the province already apprehensive of and agitating against perceived domination of non-locals. Remaining acreage is in Punjab, Sindh and NWFP.

Water is already a contentious issue between provinces, particularly Punjab and Sindh. How much are claims of the two provinces justified is a different aspect of the situation; the current shortage and increasing scarcity of this vital commodity for agricultural crops is increasingly becoming a serious stumbling block for ensuring sustainability of Pakistan's agriculture. How are corporate farmers to overcome this shortage?

Obvious answer: by exploiting underground resources. The fact that the major percentage of land to be brought under corporate farming lies in Balochistan, which is largely if not wholly outside the country's irrigation system, points towards ground water through tube wells as the only source for nourishing crops. Whatever the corporate farmers bring to Pakistan in terms of resources, water cannot be a component of their 'investment'.

Over half a million tube wells are already in harness in Punjab; they are a threat to aquifer and have been instrumental in dangerously lowering the water table. Because of low rains for the past few years, the aquifer has not been recharged; many areas of Punjab are often drilling brackish under ground water that has to be mixed with sweet water before application to crops.

Underground water of Balochistan is likely to become an issue within no time of the launching of corporate farming because this would be main source for the neo- feudal elements for irrigating crops. Needless to say, they would want to use the last drop for raising crops and ensuring a satisfying harvest of profits for that is what motivates them to "investing'.

Incentives offered for corporate farming are astounding; they are unprecedented, unimaginably generous and cover a very wide range: zero percent custom duty on imported farm machinery, tax rebates for dividends facilities and permissions for remittance of capital and profits on a fifty-year lease on land, the deed extendible by more for than forty years. Given similar facilities, the poor farmers are capable of transforming the landscape in to a greener, higher yielding landscape.

Sixty percent foreign equity is to be allowed while minimum foreign investment has been placed at $3 million. Credits are offered to investors by local banks. The Board of Investment(BOI) has in fact promised earmarking of separate credit share for investors from banks and financial institutions. Initial depreciation allowance would be available to investors at the rate of 50 percent of machinery cost.

The investment offer is for 'local or foreign, private or, public limited companies with no ceiling on land holding while state land can be purchased or leased through open auction', according to BOI that is handling the project'.

The range of projects under Corporate — Farming (CF) extends to the entire agricultural spectrum and includes fisheries, forestry, and livestock, marketing and cool chains. Production of quality seed is included in the package. In the seafood sector, farming, processing, preservation of fish, prawns and other marine products has also been also offered for corporate farming. Fruit farming, processing and packaging is part of the offer.

Reclamation of waterfront areas, creeks and modernization development of irrigation facilities and water management are to be some other possibilities for investment.

This means that the national irrigation system would be available to corporate farmers wherever land under their management would be in irrigated area.

This is recipe for marginalizing, if not eliminating small farmers who constitute the bulk of Pakistan's farming community because, already pushed to the wall by rich landlords, they lack staying power against the powerful feudal elements and multinationals.

Being traditional farmers and lacking know-how of and support for marketing, they grow basic crops like wheat, cotton, rice-mostly coarse and sugar cane that can be disposed off through the existing marketing system. Corporate farmers would cultivate crops from the viewpoint of profits; food security cannot be on their agenda.

The small farmers are a disorganized and mostly impoverished segment. They do not have a voice. Even big farmers are reported to have protested against the programme and some NGO's with a rural interest base have stepped forward to articulate their fears.

Five NGO's operating as Sustainable Agriculture Action Group (SAAG) recently took up the issue at a press conference in Islamabad in which they demanded immediate freeze' implementation of the policy saying that it would cause 'massive displacement of rural communities, create wide scale unemployment and enhance insecurity in the country'.

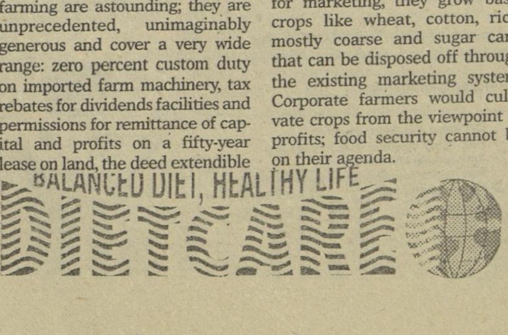
According to SAAG 'corporate farming would be tantamount to handling over the control of our food production and distribution system from indigenous rural communities to outside forces. No country can afford to do that. What pressure has forced Pakistan to adopt this policy is unfathomable. The sector is as vital for the country as defence.

...From P:24
vol.2(6) Jun 98
PACKAGED FOOD
TECHNOLOGY

By not requiring refrigeration, the cartons save energy. The fact that the cartons are supplied flattened to manufacturers of food and beverage items also mean that energy and space is saved in transportation and storage.

In a developing country like Pakistan, attaining higher energy output has always been a problem. From an environmental point of view, energy saving and energy recovery can be as good a way of dealing with the problem as creating new energy. Used packaged food cartons can be effectively used for energy recovery as well; as each ton of used cartons contains about as much energy as half a ton of oil. According to an estimate a one-litre empty carton contains enough energy to burn a 40W light bulb for more than one hour! Thus the cartons are a valuable source of fuel for modern waste-to-energy power plants.

A very important additional benefit of recycling used cartons to produce electricity is that problem of disposing of waste is also solved simultaneously.



Bulletin of
First DietCare Center

Vol. 2 No. 8 August 1998

'Can food' be preserved

A company is offering tin food packaging in the city. The food can be consumed even after six months

The city of Lahore has its unique culture unmatched by that of any other city of the country. And the exquisite food cooked and eaten here has a major role to play making it rich. People of Lahore are so obsessed with their craving for local food that they miss it the most when they are away from their city. In short it's not the home sickness but food sickness that strengthens typical Lahorites' bond with their city.

This major concern of Lahorites willing to travel out of station has been well addressed by a few individuals who have started food preservation business in the busy Ganpat Road Area, near Anarkali. Concentrated in the famous Bengali Street across this road, they offer packaging services to those customers who want to carry food to distant places, even abroad where they want to stay for months. The most interesting part of the story is that they claim that the packed food would not spoil neither its taste would change. And what they charge for it is Rs 70 per every kg of food brought, either from home or the market for packaging.

Muhammad Abid, who works at one of these outlets, tells *The News on Sunday* that the idea of packing food in cans is comparatively new to the people of Lahore, whereas this practice is in vogue in Karachi for decades. "It was as late as in year 2000 that his boss, who belongs to Karachi, introduced this phenomenon in Lahore. Lahorites were familiar with canned food marketed by leading food brands but getting home-cooked food packed in airtight cans was something totally new," he adds.

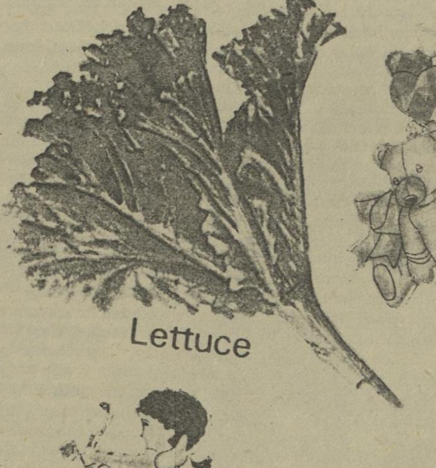
Dwelling in detail on the concept, he says, "what we do is that we ask our clients to bring food to us and give us a day or two to finish the packing process. The food packed here is fit for consumption even after six months. The cans in which the food is packed can be stored at room temperature and there is no need to keep them in deep freezers."

He goes on to say,"what we do is that we heat the tin cans and food to a very high temperature and create vacuum in the cans before they are sealed. We do not use preservatives. The whole process is carried out in a plant installed in one-room unit. As the oxygen supply is cut off, it is protected against bacteria, microbes, enzymes, insects, light, moisture and other things that might spoil it. And we charge Rs 70 only for packing every kilogram of food whether it be *biryani, karahi gosht, nihari, curry*, or any kind of gravy. The only precaution we want our clients to take is that they should not use ingredients like tomatoes and yogurt that make the food sour."

Shahid Ali, a marketing executive for another food packaging concern, tells *TNS* "that the idea has been a great success in the city. People are taking canned food along with them while going on vacations, out of country, sending it to their children studying abroad or those who have been advised by physicians to consume a specific diet. But the major concern of people heading abroad is that they want to eat *halal* food and want their children to do the same. We make all this possible for them and that also at such a small cost. You will be surprised to know that our business has seen significant growth since the easing of tensions between Pakistan and India. Our meat lover Lahorite friends find it convenient to take their favourite '*halal*' food to a country that is pre-dominantly vegetarian."

About the hygienic condition of the plant and packaging material, Abid says, "we use food grade material and sterilize it before filling it with food. Besides, we use coated tin plates that are rust-free. The cans are made in round shape so that they can contain maximum weight of food as compared to any other shape, consuming the same amount of packing material."

Mujahid Kamran, a regular traveller to Northern Areas for the sake of tourism, tells *TNS* he heaved a sigh of relief when he came to know about the facility of food preserved in tin packs. "I was fed up with expensive but poorly cooked food available in country's major hill stations. What I do now is that I select an assortment of my favourite food and get them all packed. While on journey, all I have to do when I feel hungry is just heat a can on wood fire or a stove at some nearby tea-shop or dip it in boiling hot water. While it gets hot I buy bread and enjoy my food wherever I am at that time. In case of food items like *biryani* and *halwa*, one does not even need to buy bread. You can't imagine how wonderful it is to eat *curry, Amratsari hareesa* or *Haji's nihari* on a moonlit night with your friends or loved ones, while on a visit to lake Saif-ul-Muluk," he adds.



Garlic

a natural antibiotic, protects from infections, detoxifies the body, promotes sweating, lowers blood pressure, hysteria, asthma, arthritis, tuberculosis, circulatory problems, colds, bronchitis, fever, flu, toothache, headache, earache, digestive problems, constipation, genitor-urinary diseases, heart disorders, jaundice, sinusitis, dysentery, diarrhea, diabetes, gastritis and yeast infections.

Garlic has been renowned for its medicinal properties throughout history. Today, Garlic is used with endless array of remedies for everything from insect bites and fever to intestinal ailments.

The main active ingredient of garlic is natural sulfur-based compounds (allicin, ajoene, alliin) which:

- Reduce your body's cholesterol creation
- Reduce plaque formation in your blood vessels
- Help dilate the blood vessels
- Help decrease blood pressure
- Decrease platelet aggregation
- Help break up blood clots (fibrinolytic)
- Antibacterial and Antifungal
- May help to prevent cancer by stimulating the immune system

First Dietcare Centre

Food security remains an unfulfilled dream

AVAILABILITY of basic foodstuff is of vital importance. It has become a concern for governments of poor countries, especially, those under population pressure. "Food security exists when all people, at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." World Food Summit (FAO, 1996).

In Pakistan, food security remains an unfulfilled dream for the currently about 42 million people. The fact that about one third of the population does not have access to food needed for adequate nutrition is manifested by the incidence of malnutrition.

Among the 174 nations covered by the latest survey using the criteria of Human Development Index (HDI), Pakistan was ranked 135th. Access to food is mainly related to poverty, and for four decades Pakistan has been trying to reduce poverty. The proportion of people below the poverty line fell from 52 per cent in 1970-71 to 17 per cent in 1987-88. However, since early 1990's poverty is on rise. Recent estimates showed that 50 per cent of the population falls below the poverty line. Food poverty (caloric based) incidence showed that about one-third of the households are living below the food poverty line (the people consuming calories below the recommended level) and they are not meeting their nutritional requirements. The incidence of food poverty is higher in rural areas (35 per cent), than in urban areas (26 per cent).

Estimates show that in Pakistan per capita calories intake has improved from 1,940kg calories per day in 1960 to 2,457kg in 2001. Although, the per capita availability has significantly increased over time, but the problem lies in the non-equity of food and income distribution, which caused increase in poverty within each group and even within the members of the household. The inequality in income distribution resulting in chronic and persistent hunger is the single biggest scourge of Pakistan today.

The physical expression of this continuously re-enacted tragedy is the condition of under-nutrition, which manifests itself among large section of the poor, particularly among women and children.

It is said that Pakistan has achieved self-sufficiency in the matter of food grains (which is still a dream) but what exactly one means when one says this. It loosely refers to the fact that Pakistan is no longer required to import food grains. It certainly can legitimately take pride in being able to manage the existing demand for food grains with indigenous production. But what about the suppressed demand, the demand that should have been there but it is absent due to poverty? Effective demand and consequent consumption of required quantity of food grains is not what it should be; otherwise millions would not have been below the poverty line, not being able to consume at least minimum levels of calories. This lack of access or lack of purchasing power has been forcefully brought out by Amartya Sen when he described it as deprivation due to non-entitlement or "the inability of certain people to command food through the legal means available in the society, including the use of production possibilities, trade opportunities, entitlement vis-à-vis the State and other methods of acquiring food". He goes on to say that a "person starves either because he does not have the ability to command enough food or because he does not use this ability to avoid starvation."

Policy thrust:

1. There is a need to review the current state of the art with respect to research and development activities that affect food systems in Pakistan.

2. In the context of access to food, it would be important to identify the food insecure people, which are financially poor and are unable to acquire sufficient food, even if the overall supply of food in the country is sufficient.

3. Reorganize and reactivate the public and private sectors to support the farmer by purchasing their crops, provide storage facilities, proper post-harvest handlings, more investment and information about proper application of physical inputs for improving income level for easy access to food.

4. Diversification of on-farm and off-farm income generation activities i.e., encouraging small enterprises, rural poultry, dairy farming, women involvement in household decisions and income generations, etc.

5. The WTO should state publicly that the achievement of the 2015 poverty reduction target is an explicit objective of its work. Under the WTO developing countries must be exempted from minimum market access obligations for food/agricultural products, especially regarding basic food items. The AoA should adopt the World Food Summit target of halving world hunger by the same date.

Why women are touchy about their size

WOMEN who over-react to remarks about their body shape are only doing what comes naturally, a study has found.

Psychiatrists have located the part of the brain which 'lights up' when a woman's weight and size are under scrutiny. They say it is the same area responsible for anger and fear - which could explain why women tend to take personal remarks so... personally.

The study suggests they are born to be sensitive about their body image while men are far more rational. Words such as 'fat', 'overweight' ~~and 'heavy'~~ have an immediate effect on the area of a woman's brain programmed to take action over threats and emotionally negative experiences. Such words have a different effect on men, triggering the part of the brain that deals with rational thought and problem solving.

Japanese psychiatrists used magnetic resonance scanning to investigate how the brain processes words concerning body image. They found gender differences that could finally explain why women are so upset if they get the wrong answer to the age-old question: 'Does my bum look big in this?'

When women hear words such as 'obesity' 'corpulence' and 'heavy', a part of the brain called the amygdala goes into overdrive, their study found. This area deals with verbal and physical threats, which means these words carry an extra emotional significance for women.

In contrast, there was no significant activation of the medial prefrontal cortex, which deals with rational thought processing. But this was the area that 'lit up' when men heard the same words about body shape, says a report today in the British Journal of Psychiatry. Consultant psychiatrist Dr Trevor Turner said the amygdala was better known as the 'anger zone' because it deals with real and perceived threats.

It also processes fear. 'It's part of the brain which deals with very emotional responses, it's intuitive processing and it's the part which becomes activated when you lose your temper,' he said. 'If there is an intense reaction to a stimulus, this is where it starts. This fascinating use of scanning suggests men have a much more rational response to language about body shape than women - and they get angry about different things than women. "The part of the brain in men which reacts to unpleasant words is also the area which interprets railways timetables," he added.

Dr Turner, clinical director of the East London and the City Mental Health NHS Trust, said the amygdala was activated in men when there was a physical threat. "In women there is a bigger role for verbal stimuli. But everyone knows there is only way to answer a woman who asks: Does my bum look big in this?" he said. "The answer is no, or your bum doesn't look big anyway."

The researchers from Hiroshima University studied 13 men and 13 women in their 20s. They claim the findings may help explain why women are more prone to develop eating disorders. Anorexia and bulimia are ten times more common in women than men. The researchers believe this may result from women's brains over-reacting to emotionally negative situations. COURTESY DAILY MAIL

Bulletin of
First DietCare Center

Vol. 2 No. 9
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Calcium needs

Q I know women should take calcium supplements, but is it a good idea for men? What's the difference between oyster shell calcium and other types? Which is best?

A Men can and do get osteoporosis. The daily recommended calcium allotment for men and women ages 31 to 50 is 1,000 mg, and for those 51 and older it is 1,200 mg. If a man or woman isn't getting that amount through meals, then a supplement is recommended.

The two most common calcium supplements are calcium carbonate and calcium citrate. Oyster shell calcium is calcium carbonate. If the label on a food or supplement gives the amount of calcium as 'calcium' (no other word attached to it), that is the amount of pure calcium contained in the food. That amount is also called 'elemental calcium'. It's the number you pay attention to. If the label gives the amount of calcium as 'calcium carbonate', then the amount of pure calcium is only 40 per cent of the stated weight. If it gives the weight as 'calcium citrate', the amount of pure calcium is only 21 per cent of the weight. For example, a food (or supplement) that has 1,000 mg of calcium carbonate has only 40 percent of that weight as pure or elemental calcium — 400mg. One thousand milligrams of calcium citrate has only 210 mg of pure calcium.

No more than 500 mg of calcium should be taken at any one time. More than that is not fully absorbed.

Calcium citrate is more easily absorbed than calcium carbonate. It is also more expensive. You can take calcium citrate without regard to meals. You should take calcium carbonate with meals, since it needs stomach acid for absorption. Stomach acid production is at its peak at mealtime. Either preparation gives you a sufficient amount of calcium. It's up to you to choose one for yourself.

You don't have to rely on supplements for your calcium needs. You can get all you need from food and drink. One cup of plain, nonfat yogurt has 350 to 400 mg; a cup of skim milk, 300; 1 ounce of cheese, 200 to 270; 3/4 cup of fortified orange juice, 225; 3 ounces of sardines with bones, 400.

Q There is much publicity about the dangers of secondhand smoke, even that it is more hazardous than firsthand. No one gives an explanation. Why is it so? I am inclined to believe it is not true but just another attack on smoking. Your response would be appreciated.

A Most of the secondhand smoke that fills a room with a delightful odour comes from the cloud of smoke rising from a smouldering cigarette. That kind of smoke has high levels of carbon monoxide, cyanide, arsenic and nicotine tars.

When a smoker takes a puff on a cigarette, the cigarette temporarily burns at a higher temperature than it does when it is held in the hand or rests in an ashtray. Higher temperatures afford a more complete combustion of some of the cigarette's toxic materials. Inhaled and exhaled smoke, therefore,is less dangerous to people in the immediate environment. Don't take this to mean that a cigarette smoker enhances personal health by smoking. The smoker actually gets both firsthand and secondhand smoke.

Q Is it possible for a 58-year-old to develop lactose intolerance after years of drinking milk with meals? My symptoms began during the past five years. Recently I eliminated dairy products from my diet and no longer have the diarrhea. My medical reference book talks only about babies having lactose intolerance.

A It's possible to develop lactose intolerance at any age.

Lactose is milk sugar. Lactase is the enzyme that breaks down lactose for digestion. A deficiency of the lactase enzyme gives rise to the condition of lactose intolerance, also spoken of as lactase deficiency.

Undigested milk sugar creates digestive tract turmoil. Diarrhea, bloating, gas and abdominal pain can result. You can get the lactase enzyme in forms that can be added to foods or drinks, and you can also get it in dairy products that come pretreated with lactase. ■

Passive smoking

CHILDREN who are exposed to tobacco smoke in the home achieve lower scores in tests of reading and maths, researchers say.

The US study, part of the largest to look at the effects of environmental tobacco smoke on children's health, assessed the cognitive skills of youngsters who were exposed to passive smoking. The team found even low levels of exposure to smoking in the home and elsewhere caused the children's test scores to drop.

Tobacco exposure: The researchers, writing in the journal Environmental Health Perspectives, measured exposure to environmental tobacco smoke by looking at levels of cotinine - a substance produced when nicotine is broken down by the body. Cotinine can be measured in the blood, urine, saliva and hair and is considered to be the best marker of exposure to secondhand smoke. The researchers, from Children's Environmental Health Centre in Cincinnati, measured the cotinine in the blood of 4,399 children aged six to 16. Standard reading, maths, logic and reasoning tests were then used to assess their cognitive skills.

Researcher Dr Kimberly Yolton said that reading, maths and reasoning scores were related to environmental tobacco smoke exposure. She said that the greater the levels of exposure, the greater the decline in reading and reasoning ability. "This study provides further incentive for states to set public health standards to protect children from exposure to environmental tobacco smoke," Dr Yolton said.

'Huge implications': For youngsters with a modest increase in exposure to smoke, the study found a three-point drop in a standard reading test and a two-point drop in a maths test, both of which were marked out of 100 points. "These declines may not be clinically meaningful for an individual child, but they have huge implications for our society because millions of children are exposed to environmental tobacco smoke," Dr Yolton added.

A series of hard-hitting campaigns in the UK have sought to encourage parents to protect their children from passive smoking, which increases the risk of asthma and other respiratory disorders.

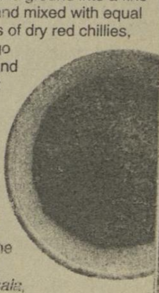
In November, the Government said smoking in the majority of enclosed public places, including pubs which serve food, would be banned within four years. But campaigners warn that millions of youngsters are exposed to large amounts of smoke every day in their own homes. COURTESY DAILY MAIL

The zing of *Chaat Masala*

By Nazish Khalid

Ramazan is here and so are the *iftaris*... the time when we shamelessly indulge in all that is fat and fabulous! However, those who have a conscience, make *chaat* their staple diet, which brings me to *chaat masala*, the glorious topping that gives *chaat* that extra flavour.

Chaat masala is a concoction of different spices. Dried coriander and cumin seeds are roasted and ground into a fine powder and mixed with equal quantities of dry red chillies, dry mango powder and black salt (rock form). A double helping of black pepper is added to the mix to produce the powdered *chaat masala*, available in the market.



Chaat masala is extremely healthy. Coriander seeds act as an antibacterial agent against several organisms. They are good for digestion. Cumin is valuable in treating diarrhoea and flatulence and is used to stimulate the appetite. Black pepper, a major component of *chaat masala*, is used for treating gastro-intestinal upsets. Nearly all the components of *chaat masala* aid in digestion, with the exception of the dry red chillies. The red chillies give the *masala* a kick, but they also cause heartburn, which is why there is reason to be wary of too much *chaat masala*.

Although *chaat masala* can be stored in a cool, dry place in an airtight container, it loses its colour and aroma fairly quickly. Whether you buy it or make it at home, do so in weekly portions, so that you can enjoy its freshness at every *iftar!*

Water or soft drinks

Water makes the body function. A lot of people nowadays drink colas in place of water. ***Shamoon A. Halai*** *points out the difference between the two*

Water or cola, which would you prefer? We all know that water is important but we are not aware of the dangers of consuming colas. Here are some facts:

Properties of water

* 75 per cent of people are chronically dehydrated. (This likely applies to half the world's population)

* In 37 per cent of people, the thirst mechanism is so weak that it is often mistaken for hunger

* Even mild dehydration will slow down one's metabolism to three per cent

* One glass of water will shut down midnight hunger pangs for almost 100 per cent of the dieters (study by a University of Washington research group)

* Lack of water is the main reason for daytime fatigue.

* Preliminary research indicates that eight to ten glasses of water a day could significantly ease back and joint pain for up to 80 per cent of sufferers

* A mere two per cent drop in body water can trigger fuzzy short-term memory, trouble with basic maths, and difficulty focusing on the computer screen or on a printed page

* Drinking five glasses of water daily decreases the risk of colon cancer by 45 per cent, and can lessen the risk of breast cancer by 79 per cent. One is 50 per cent less likely to develop bladder cancer

Properties of colas

* In many states of America the highway police carry two gallons of colas in the trunk to remove blood from the highway after a car accident

* If you put a bone steak in a bowl of cola it will dissolve in two days

* To clean a toilet pour a can of cola into the toilet bowl and let it sit for one hour, then flush clean. The citric acid in it removes stains from vitreous china

* To remove rust spots from chrome car bumpers rub the bumper with a piece of aluminum foil dipped in cola

* To clean corrosion from car battery terminals pour a can of cola over the terminals and bubble away the corrosion

* To loosen a rusted bolt just apply a cloth soaked in cola to the bolt for several minutes

* To bake a beef roast empty a can of cola into the baking pan. Wrap the beef in aluminum foil and bake. After 30 minutes remove the foil allowing the drippings to mix with the cola for a sumptuous brown gravy

* To remove grease from clothes empty a can of cola into a load of greasy clothes, add detergent and run through a regular washing machine cycle. The cola will help loosen grease stains

* Colas also clean road haze from the car windshield

Some pointers

* The active ingredient in cola is phosphoric acid. Its pH is 2.8. It will dissolve a nail in about four days. Phosphoric acid also drains calcium from bones and is a major contributor to the rising increase in osteoporosis

* While carrying cola syrup (the concentrate) the commercial truck should display 'hazardous material' cards reserved for highly corrosive materials

* The distributors of colas have been using it to clean the engines of their trucks for about 20 years

Now the question is, would you like a glass of water or a cola? ■

Gout pains

Q Not more than an hour ago, I left my doctor's office after showing him my painful right knee. I thought I might have gout, but the doctor said he didn't think so. He said it might be pseudogout, whatever that is. How is he going to find out, and what is it?

A "Pseudo" in front of any word means "false". Pseudogout earned its name by having symptoms so similar to true gout that it was often mistaken for it.

In gout, uric acid crystals penetrate joints and cause them to throb and swell. In pseudogout, the crystals are calcium pyrophosphate dehydrate, and they can cause as much joint swelling and pain as can gout's uric acid crystals.

The names of these crystals are unimportant to patients. They are important to their doctors, for the diagnosis of gout and pseudogout lies in identifying the crystals in joint fluid aspirated from a swollen joint. To anticipate a question many readers will have, calcium pyrophosphate does not come from calcium in the diet.

Pseudogout usually is a condition that happens only to older people. What in the aging process causes it is a matter that has not been clarified. In a few instances, pseudogout results from another ongoing illness, such as thyroid or parathyroid gland disease.

The pain of pseudogout is every bit as fierce as the pain of gout. It does not commonly affect the base of the big toes as gout does, but it can and does attack knees and ankles.

Anti-inflammatory drugs, such as Voltaren, Motrin, Indocin, Naprosyn, Celebrex and others, can usually calm a pseudogout-inflamed joint. If oral medicines cannot contain the pain, then injecting the joint with a cortisone drug almost always succeeds.

Q I have painful, red bumps on my shins, and my knees have started to hurt. What's going on? Have you ever heard of something like this, and does it go away?

A Your description strongly suggests erythema nodosum, an outbreak of painful red nodules on the legs, the arms or both. Frequently, people experience a blah feeling that puts them out of sorts shortly before the skin outbreak occurs.

In addition to the skin bumps, about half also experience painful joints.

The initial crop of red nodules lasts about two weeks, but almost always a new crop of bumps appears.

The immune system is the cause of both the joint and the skin manifestations, so it is possible to relate the two. There are many conditions that turn the immune system on so it produces these symptoms.

Infections can do it. Fungal infections as well as strep infections and even such mundane things as the common cold can be the cause.

Allergic reactions, especially reactions to drugs, including the birth control pill, also prime the immune system to provoke an attack of erythema nodosum.

Ulcerative colitis, Hodgkin's disease and sarcoidosis (a somewhat mysterious illness) are other conditions that lead to erythema nodosum.

I am belabouring the point only to impress upon you that you have grounds to see your doctor to confirm the diagnosis of erythema nodosum and to find a cause if that is possible. Treatment is geared to treating the cause.

Q I take Fosamax and calcium for osteoporosis. I like to keep medicines to a minimum. Wouldn't calcium be sufficient?

A Fosamax stops bone destruction. Calcium is important to maintain bone health, but it cannot stop bone destruction. Calcium is wonderful for prevention, but it is only one of the many necessary treatments for osteoporosis. ■

BALANCED DIET, HEALTHY LIFE
DIETCARE

Bulletin of
First DietCare Center

Vol. 2 No. 10 October 1998

FREE RADICAL MEDIATION OF CELL INJURY

Pakistan**Introduction**Bacterial theory of the disease was the most significant one of the 19 century. The FreeRadical theory was the next theory of the major importance of 20 century. The man who wentdown in the books of history as father of free radical medicine was Dr. Denham Harman. Fortyyears ago he blamed these "Biochemical bad boys" as a major cause of diseases & aging bypublishing a paper on the harmful effects of free radicals but like Pasture's and many otherpioneers' his idea went unheeded for many years. Even today the average physicians taking careof our population are not familiar with this major "Earth Shattering Theory"

In current years the study of free radicals has become of extreme interest by role of freeradicals in large number of diseases and pathological states; for example, cancer, aging, heartattack, stroke and diabetes, all have free radical as components to their mechanism of injury

Definition of free radicalsFree radicals are extremely unstable, highly reactive chemical species with a singleunpaired electron in an outer orbital

Examples(i) Superoxide radical (02')

(ii) Hydrogen peroxide ?02)

(iii) Hydroxyl ion (OH')

(iv) Hydrogen ion 0-T)

(v) Singlet oxygenSources of free radicalsProduction of free radicals is inevitable; external sources of free radicals are cigarettesmoke and any one of million of toxic substances which one takes in to one's body with food orwater or alcohol and breathing. The sun itself as well as all type of radiations causes free radicalproduction inside the body

However, these may also be generated within the cell by oxidation-reduction reactionand enzymatic metabolism of exogenous chemicals (carbon tetrachloride). These react with freeradicals and in turn themselves are converted into free radicals thus further propagating the chainof reactions

Pathogenesis of free radicalsThe changes that occur in a cell, following injury depend on the site of injury, nature andduration of stimulus, metabolic state of cell, supply of oxygen and nutrients, and the ability ofcell to remove metabolic waste products

In general, however, the most metabolically active cells like brain and liver are mostsusceptible to injurious agent. Free radical usually causes damage to one or more majororganelle systemThe four intracellular systems particularly vulnerable to free radicals cell injury are:(i) Cell membrane: Integrity of cell membrane is damaged and cell death takes place

(ii) Mitochondria: There is impairment in aerobic respiration as well as ATP productionleading to cell death

(iii) Synthesis of structural protein and enzymes is blocked

(iv) Impairment in the normal preservation of genetic apparatus of cell

Damage to the integrity of cell membraneAll the body cells have a "skin or membrane" as an outer shell. In the same way all themajor cell organelles like nucleus, mitochondria, endoplasmic reticulum and lysosomes alsohave protective covering (membrane) that is made up of fat (cholesterol, being a key componentof cell membrane, is a particular type of fat). Cell membrane has to allow the passage of materiali.e. water and nutrients inside the cell as well as garbage and waste products out of the cell. Fatis particularly vulnerable to being damaged by free radicals through "lipid peroxidation chainreaction". Cell membrane is damaged by free radicals by "punching holes"

The passage of material in and out of the cell may not take place properly. Oneconsequence of this might be that garbage accumulates inside the cell and cell dies in a "sea oftoxic wastes"

Damage to mitochondriaMitochondria are energy converters, where the nutrients are transformed into energy bythe process of "oxidative phosphorylation", which we need to alive. Free radical (oxidants)

molecules produced by the metabolism of oxygen that can wreak havoc on the cells and theirDNA. As a source of these toxic products (oxidants) mitochondria are first potential victims

Damage to DNAEach cell contains a "blueprint" by which it causes a new cell to be created. Theblueprint is often referred to as DNA (Deoxyribonucleic acid) of the cell that builds the enzymesthat build the structure of body. When the DNA is damaged by the hitting of million of freeradicals either produced inside the cell or coming from external sources. "When the electron isexpelled from DNA by hitting of free radicals it may make mutated enzymes that may not beable to function properly. So either cell cannot be reproduced and the aging process isaccelerated or it will reproduce as a cancer cell (reproduction with an abnormal fast rate)

Free radicals & agingFree radicals are the source of virtually all the diseases, illnesses and aging. These impairthe normal functions of cell membrane and cell dies either due to starvation or drawing in thesea of toxic waste products. This type of damage accelerates the aging process as the tissues losetheir functions due to steadily decreasing number of cells

When DNA of the cell is damaged by free radicals cell cannot reproduce, again thiswould accelerate the aging process. Free radicals hit the skin protein collagen (that is responsibleto weld the skin molecules) and denature it. The skin looses its elasticity and smoothness andbecomes stiff and wrinkled, a sign of aging

Some habits of the man harm his health tremendously. He is not fully aware of thehazards of alcohol and cigarette. Alcohol is potent generator of free radicals. It also gets into thebrain very easily. Nicotine present in the cigarette is one of the most potent generators of freeradicals. This is why smoking is overwhelming health risk. Free radicals produced by any sourcehave worst effects on the internal organs like heart, lungs and vascular systemDetection of

free radicalsFree radical detection was a challenge for the scientists in many fields of biologicalresearch due to its short life. Electron Spin Resonance (BSR) is a spectroscopic technique thatdetects the impaired electron present in free radicals. Some times free radicals cannot be directlydetermined by ESR, in such cases spin trapping technique combined with electron spinresonance

cont...

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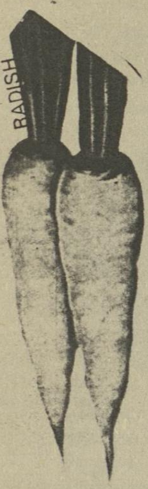
Continued from page: 37



detection has become the tool of choice for studying free radicals in biologicalsystem

Mechanism by which body combats free radicalsBody has the ability to protect itself from the adverse .effect of free radicals. There arethree main endogenous enzymatic defense antioxidants present in the body with which itdefends itself against free radical exposure

(i) Catalase: which neutralizes peroxide

(ii) Superoxide dismutase; which destroys superoxide radicals

(iii) Glutathione peroxidase: which detoxifies peroxide molecule

However their function in acidic pH (stomach) as well as their large size is under criticaldiscussion. Glutathione is made from cysteine, selenium and other ammo acid substances. In thesame way vitamin E & C also play a key role to defend body from adverse effects of freeradicals

Treatment of cell injured by free radicalsSince long, no drug was available to treat free radicals. The drugs used to beadministered were often sources of more free radicals. However, the substances, whichneutralized these free radicals, were vitamin C, selenium and pine bar extract or grape seedextract. The most powerful has been a new substance called "Microhydrin". The difference inthe power between microhydrin and any other antioxidant is enormous. It is thousands of timemore. effective than any other antioxidants or free radical fighters

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Eid: an occasion for poor to eat meat

MULTAN: Eid-ul-Azha is a major religious festival that brings unique pleasure to the Muslims but its divine purpose is not served at all if the poor remain deprived of their share in the sacrificial meat.

Main aim of this Eid is one's willingness to sacrifice to please Allah and to enable the poor eat meat as a matter of their right and not as charity.

Allah says it is piety of the God-fearing believers that reaches Him and not the meat of the sacrificial animals.

Our societal customs have often corrupted the noble motives and objectives; much of the sacrificial meat is exchanged between rich relatives and the destitute families remain deprived of their right bestowed upon them by the divine commandment.

Despite skyrocketing prices of the sacrificial animals, millions of Muslims across the globe and two million Hajj pilgrims offer sacrifice on the occasion of Eid-ul-Azha every year.

The rich and affluent believers are required to sacrifice best possible animals in the way of Allah so that the poor ones, Muslims and non-Muslims alike, could eat meat to their fill atleast once a year.

Some people rear their sacrificial animals throughout the year and decorate them on the Eid day. Others purchase from the local cattle markets or roadside sale points specially set up ahead of Eid.

Many cattle-sellers drawn from rural areas wait for Eid-ul-Azha to sell their animals at a good price. A few cattle-heads' proceeds suffice a rural family's whole year's expenses.

Butchers are the most sought after species, whose high demands are often met helplessly.

Believers, particularly children, usually don new clothes on the Eid day. After offering Eid prayers at about 8.00 am to 9.00 am, people prod their animals to the place of slaughter with ineffable pleasure and pride.

Some 5,000 years ago Prophet Ibrahim (AS) prepared to sacrifice his son Hazrat Ismail (AS) following a dream. They thrice defied Satans dissuasions. Thus Allah enjoined the believers to follow their tradition of sacrifice and stoning of Satan thrice among the obligatory Hajj rituals.

According to the tradition of the Holy Prophet Muhammad (peace be upon him) a goat or a sheep is sacrificed by one person and a cow, a bull, a buffalo or a camel by seven persons jointly.

Sacrificial meat is divided in three equal shares for self, relatives and the needy. Many people distribute one third of the meat among the needy, but in rural localities people usually contribute to the mound of meat set for distribution among the poor. Of course, hides and skins of the sacrificial animals are an exclusive right of the needy and impoverished segments. The Saudi government makes special arrangements to airlift the sacrificial meat of Hajj pilgrims to the Afghan and other refugees every year. Being in big quantity, the sacrificial meat is preserved in many ways. Some boil and bake it in the sunlight, others bake the fresh meat but a majority dumps it in the deep freezers.

People relish meat in different shapes and tastes, ranging from fried, broast and Karahi mutton and beef to Tikkas, Seekh Kabab, Chaanps, minced meat, in Biryani and so many more varieties. A local adage goes, "Gosht Dil Da Dost". Meat, the most nutritious diet, is a common man's weakness. Even old people, unable to chew meat, get sulky over a refusal to their demand for it. Mutton is dearer than beef. So, only well off families can afford it in their daily meals. Beef is popular among the rural populace for its affordability. It is only the Eid-ul-Azha that offers an opportunity to everybody to eat meat to ones fill.
(APP Feature Service)

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BALANCED DIET, HEALTHY LIFE
DIETCARE

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Food for profit

"You are what you eat," the old ads used to say, implying that if you eat healthy food you would be healthy yourself. The trouble is, of course, that we only know what is healthy from centuries of experience, and from scientific evaluation. Nowadays, plenty of food on supermarket shelves contains new and unidentified forms of ingredients that have not been evaluated properly or at all.

This applies in particular to food produced using genetic engineering (GE). Deficiencies in current labeling laws mean that not all GE-affected food components have to be identified. Moves to introduce more stringent forms of labeling were previous blocked by the US government. As a result, some poultry and edible oils containing genetically modified (GM) components are now being sold without any public warnings.

Genetic engineering is used by the monopoly agri-businesses and food corporations that dominate the food industry, principally to control the food cycle and maximise profits. It is not used to improve the health of the consumer. Genetic engineering as practiced by the transnational food corporations has been described as "an uncontrolled experiment with nature". As the environmental activist group Green Peace pointed out: "Unlike traditional breeding processes, GE takes genes from one life form and crosses them with those of another. Genes from bacteria, viruses, plants and animals have been inserted into soybeans, canola, corn and cotton to grow experimental crops. These crops are processed into foods and sold all over the world. They are bought by us and served up on our plates. Right now, millions of world's people are eating GE foods, without realising it."

The potentially adverse impacts of consuming GM products include the increased risk to genetic birth defects and other potentially serious health problems. For example, the introduction of antibiotic-resistance in GE crops may, in time, lead to the evolution of anti-biotic-resistant bacteria that will attack human beings. Some new GM soybean crops are immune to the adverse effects of insecticide sprays, which increase the risk of consumption of pesticide residues.

The food magnates have even introduced certain new corn crops that produce their own insecticide. The use of GM technology makes excellent economic sense for the major agri-business and food corporations, and has been strongly backed by them. Some of the biggest names in the food business openly use genetically modified components, or refuse to say whether they use them or not. According to Green Peace, they include Amotts, Cadbyrys, Coca Cola and Woolworth's house brands, Golden Circle and Nestle.

The small amount of testing that has been carried out on genetically modified foods to date has almost all been initiated by the food companies themselves, and the results have rarely been published for peer review. The first test results that have been published have been reviewed by the organisation food standards Australia and New Zealand. They concluded that the tests were inadequate, that GE foods have never been tested on humans, and that some foods have not even been tested on animals. There is a very strong movement among consumers against the introduction of GM food products, based on the healthily skeptical belief that business will do whatever they can to enhance their profit level, even if it involves producing unhealthy food. This has been nowhere better illustrated than in the case of food "aid", which the US government recently offered was that the food would be genetically modified. This revelation led to a widespread belief that the US government was actually using an entire Third World population as guinea pigs to test the effects of consumption of GE food products. This impression was confirmed when the Bush administration displayed extreme hostility to the Nigerian government over its subsequent rejection of the offer.

The GE companies claim loudly that their products are needed to feed the Third World. However, US Green Peace pointed out: "Hunger and starvation are the result of inequitable distribution of food—a political and economic problem. Genetic engineering will further corporate control over food production and may even make problems of hunger worse, by denying farmers in developing countries access to seeds". The GE companies themselves are extremely aggressive in implanting their production and marketing strategies. A Canadian farmer was recently sued by Monsanto for the "use" of GE seeds that had contaminated fields he was trying to retain as GE free!

SPINACH

However, things are not progressing the way they would prefer. The food industry differs significantly from, say, the tobacco industry, which could only implement a proper "healthy products" policy by voluntarily putting itself out of business. The option of using healthy products, what Green Peace and others call "true food" is still available to the food industry even if it means paying a little extra for the raw materials. Pressure from environmental and consumer groups, and the production of publications such as the true foods guide, has led a number of food producers to adopt a GM-free policy, and others are nervously hastening to follow their lead.

Conservation of the environment has emerged as one of the great battlegrounds of the modern age. An increasing number of people are becoming involved in that struggle, and are becoming politicised as a result of the experience. And nowhere is that experience more personally felt than in the struggle to ensure that the very food we eat is actually good for us, and not simply good for lining the pockets of the conglomerates that offer it for sale.

Genetic engineering is used by the monopoly agri-businesses and food corporations that dominate the food industry, principally to control the food cycle and maximise profits

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Guidelines for management of blood pressure

Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure of the United States provides a new guideline for hypertension prevention and management.

The following are the key messages:

◆ In persons older than 50 years, systolic blood pressure (BP) of more than 140 mm Hg is a much more important cardiovascular disease (CVD) risk factor than diastolic BP;

◆ The risk of CVD, beginning at 115/75 mm Hg, doubles with each increment of 20/10 mm Hg; individuals who are normotensive at 55 years of age have a 90 per cent lifetime risk for developing hypertension;

◆ Individuals with a systolic BP of 120 to 139 mm Hg or a diastolic BP of 80 to 89 mm Hg should be considered as prehypertensive and require health-promoting lifestyle modifications to prevent CVD;

◆ Thiazide-type diuretics should be used in drug treatment for most patients with uncomplicated hypertension, either alone or combined with drugs from other classes. Certain high-risk conditions are compelling indications for the initial use of other antihypertensive drug classes (angiotensin-converting enzyme inhibitors, angiotensin-receptor blockers, -blockers, calcium channel blockers);

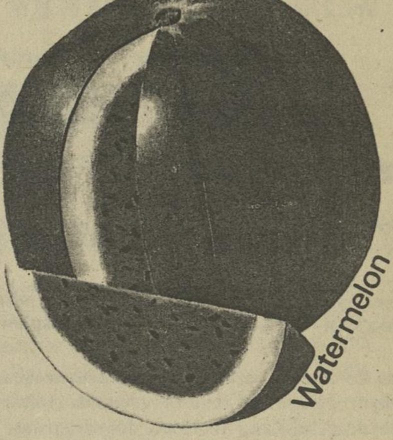
◆ Most patients with hypertension will require two or more antihypertensive medications to achieve goal BP (<140/90 mm Hg, or <130/80 mm Hg for patients with diabetes or chronic kidney disease);

◆ If BP is more than 20/10 mm Hg above goal BP, consideration should be given to initiating therapy with two agents, one of which usually should be a thiazide-type diuretic; and

◆ The most effective therapy prescribed by the most careful clinician will control hypertension only if patients are motivated. Motivation improves when patients have positive experiences with and trust in the clinician. Empathy builds trust and is a potent motivator.

Finally, in presenting these guidelines, the committee recognizes that the responsible physician's judgment remains paramount.

http://jama.com
E-drug@healthnet.org (May 14, 2003)



The new technique in Liposuction to loose weight without any risk

Any surgery involves the risk of infection, bleeding, scarring or serious injury. However, Liposuction under Local anesthesia has an amazing, good safety record. One of the reasons that liposuction under local anesthesia is safe that either general anesthesia or significant intravenous sedation is required.

The results with this new technique are usually permanent. The fat cells that are removed by liposuction don't grow back. If a patient later gains or loses weight, the change tends to distributed over the entire body provided patients does not gain large amounts of weight, the patient result are generally permanent.

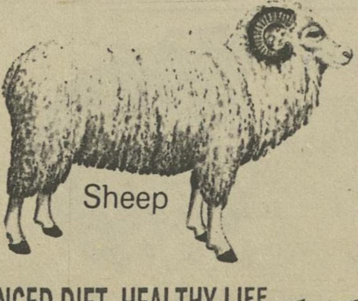
A recent survey involving 15,000 patients who had tumescent (Local Anesthesia) liposuction without general anesthesia revealed no serious complication, no serious infection, no hospitalization, no blood transfusion, and no deaths? The greatest risk of liposuction is associated with general anesthesia. By eliminated general anesthesia, the risks of liposuction are dramatically reduced.

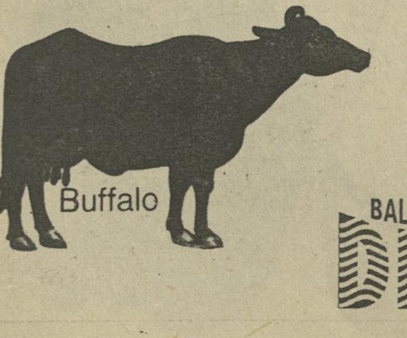
Liposuction with microcannulas (local anesthesia) is least likely to cause any significant or noticeable post surgical irregularity of the skin. Any Liposuction is not appropriate treatment of obesity. Cosmetically speaking, successful liposuction is measured in inches rather that pounds. The weight removed is not as important as the improvement in your body's contour and shape.

Because of its superior safety, the tumescent technique is now regarded as the worldwide standard of care for liposuction. Both men and women currently prefers to undergo liposculpture (Body contouring) liposuction because it is safer with no bleeding, no pain, early recovery time, no hospitalization, no bed rest, no deaths, no blood transfusion is required etc. One can get back the shape and self-image as he/she wants.

Body liposculpture by liposuction is literally a dream come true. Localized accumulation of fat, which often inherited and frequently impossible to eliminate by exercise or diet can now be removed permanently by liposuction (local anesthesia) surgery.

Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com. Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contaihed in bulletin are not alternative of medical advice.





BALANCED DIET, HEALTHY LIFE
DIETCARE

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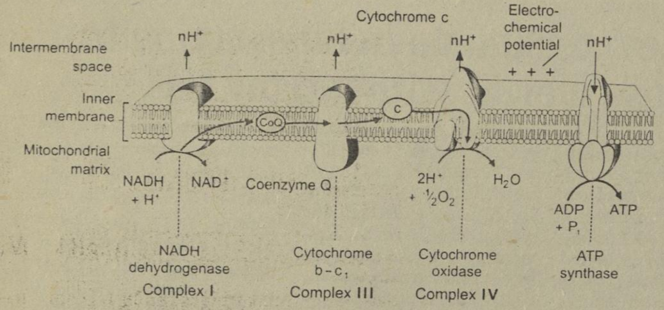
Towards General Health, Vigor & Vitality

ENERGY PRODUCTION

Co-enzyme Q-10 has a significant role on mitochondrial electron transfer and the synthesis of adenosine triphosphate (ATP).

It serves as mobile electron carrier in the mitochondrial electron transfer process of respiration and oxidative phosphorylation.

The Co-enzyme regulates NADH dehydrogenase and Succinate dehydrogenase and enables reversible interaction between the NADH dehydrogenase and Succinate dehydrogenase and Cytochrome b - c, [complex I, II, III,] portions of the mitochondrial electron transport chain.

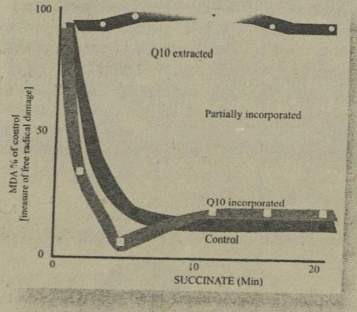


Q10 improves immunity.
Q10 enhances resistance against frequent ailments.
Q10 strengthens loose teeth & cures the gum diseases.
Q10 reduces weight in resistant obesity.
Q10 delays the ageing process.
Q10 protects sperm & egg from free radical damage.
Q10 increases sperm count & motility.
Q10 increases amount of seminal fluid.
Q10 improves patient with multiple complex allergies.
Q10 enhances cell energy.
Q10 optimizes ATP formation.
Q10 decreases free radical formation.
Q10 effectively neutralizes free radicals.
Q10 improves cardiac performance.
Q10 protects heart.
Q10 reduces high blood pressure.
Q10 increases exercise performance.
Q10 increases efficiency of sportsmen.

FREE RADICAL PROTECTION

- In reduced form Co Q-10 can chemically inactivate number of free radicals e.g. ADP-Perferryl ions, Superoxide, Lipid free radical, Lipidperoxide.
- This inactivation protects cell membrane from damage by Lipidperoxidation.
- By optimum oxygen utilisation it reduces damaging free radical production.

Inhibition of free radical damage by extraction and reincorporation of Q10

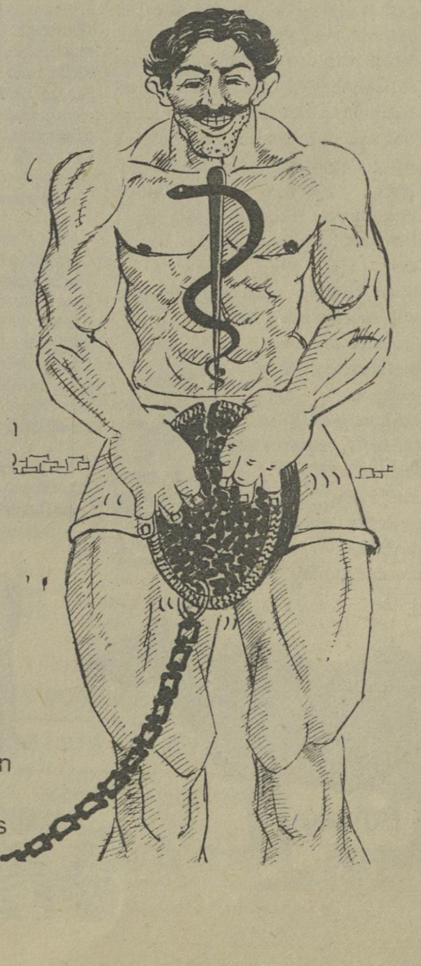


$\text{ADP-Fe -O}_2^{\cdot -} + \text{CoQH}_2 \qquad \text{ADP-Fe} + H_2O_2 + \text{COQ}$

$2O_2^{\cdot -} + \text{CoQH}_2 \qquad H_2O_2 + O_2 + \text{COQ}$

$2L^{\cdot -} + \text{CoQH}_2 \qquad 2\text{HL} + \text{COQ}$

$2\text{LOO}^{\cdot -} + \text{CoQH}_2 \qquad 2\text{LOOH} + \text{COQ}$



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STOPPING SMOKING & WEIGHT CONTROL

Will I Gain Weight When I Stop Smoking?

On average, 70-80% of people who stop smoking initially gain between 5 and 7 pounds. Most weight gain occurs in the first few weeks after stopping smoking. There is evidence that suggests that people who gain a few pounds reduce their likelihood to return to smoking. Many people actually lose weight when they stop smoking. You may feel more energetic, especially if you exercise during the stop smoking process.

Why Do People Gain Weight After Stopping Smoking?

Nicotine is a stimulant that affects the body's metabolic rate. When a person stops smoking their metabolic rate slows. If caloric intake and/or activity level is not altered, some weight gain is likely after stopping. Also, the craving for a cigarette is often confused with a hunger pang. Many ex-smokers find themselves eating more to satisfy the craving for a cigarette. Heavy smokers (>25 cigs/day) are more likely to gain weight after stopping, probably the result of their greater dependence on nicotine.

Cigarettes have been found to affect a person's sense of having eaten enough. Therefore, the person who stops smoking may have trouble knowing when to stop eating after a meal, or may feel hungry soon after eating.

Isn't Being Overweight As Dangerous As Smoking?

Smoking is far more dangerous than a few extra pounds of weight! To be at the same risk of early death associated with smoking one pack of cigarettes a day, a person needs to be 100 pounds above their ideal weight.

How Can I Control My Weight After I Stop Smoking?

- Avoid refined sugar. The body does crave sugars during withdrawal from cigarettes.
  - Fruits, vegetables, and whole grain foods will release sugars into the system more gradually, preventing the highs and lows in blood sugar that result from eating high sugar foods.
- Eat small well-balanced meals, dispersed throughout the day.
- Have enjoyable low calorie snacks available.
- Get up from the table after a meal.
- Drink water. This has multiple benefits.
- Be aware of the fat and calorie content of the foods you choose; be conscientious of your food intake.
- Be more active, which can include simple changes, such as using stairs, parking further from your destination, and walking for a few minutes after a meal. This also has benefits beyond weight control:
  - it is a good distraction
  - it promotes faster detoxification from nicotine and better sleep
  - you will notice benefits that come from stopping smoking sooner
  - it can be part of an overall lifestyle change that will help you stay smoke free

Green Pepper

FIRST
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BALANCED DIET, HEALTHY LIFE
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Vol. 3 No. 1 January 1999

Importance of fish in the diet

For many people, e.g. Eskimos, Japanese, fish is a major source of protein. Like meat, the protein is of high biological value, and is readily digested and absorbed with little waste. White fish in particular is more easily digested than meat and is a useful food for people with digestive disorders.

Unlike meat, the fat in fish consists mostly of oils containing unsaturated fatty acids. The essential fatty acids in oily fish are of benefit to health (see p. 7).

Nutritive value

The approximate nutritive value of fish is:

	Oily fish	White fish	Shellfish (edible part)
Protein	19.0%	17.5%	15%
Fat	15.0%	0.9%	4%
Water	67.5%	80.0%	8.5%
Carbohydrate	none	none	trace
Minerals	2.5%	1.2%	1.4%

Vitamins

Fat soluble Oily fish contain useful amounts of vitamins A and D in their flesh. Canned oily fish contains the most vitamin D.

White fish contain vitamins A and D in their liver oils, not in their flesh.

Shellfish are not good sources of these vitamins, as they have a low fat content.

Water soluble Fish does not contain any vitamin C. Most fish contain small amounts of the B-group vitamins.

Mineral elements

Calcium Most calcium in fish is found in the bones. If the bones of canned fish, which have been softened, are eaten, they provide a useful source of calcium.

Iodine and **fluoride** Seawater fish are good sources.

Iron Fish are poor sources of iron.

Sodium, chlorine, potassium, and phosphorus are found in all fish.

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We wish a happy new year to our readers

Cancer Mechanisms

There are several mechanisms by which dietary animal fat promotes and initiates carcinogenesis. It increases bile acids and bile steroids. It also significantly increases the number of colonic anaerobic bacteria, which then form carcinogens from bile acids. Certain bacterial enzymes are induced by beef for its digestion. These same enzymes can change cocarcinogens into carcinogens. As was already discussed, a potent fecal mutagen called fecapentaene probably also plays an important role in the development of colon cancer.

Dietary animal fat also weakens the immune system by decreasing antibody production and impairing the function of T cells and phagocytes.[73] Cholesterol oleate and ethyl palmitate inhibit antibody production, probably because these lipids do not allow the immune system to recognize a foreign substance.[74] In addition, the structure of a fat makes it easily susceptible to attack by free radicals and increases the cell susceptibility to carcinogens. This is more true for unsaturated fats than it is for saturated fats, because the unsaturated fats act as a natural sink for these highly unstable free-radical chemicals.

Methods of preparation and cooking

Fish can be used in many dishes, but is most popular in the UK fried in batter and served with potato chips. Overcooking tends to lead to dryness and breaking up of the flesh.

Fish	Uses
White	Steamed, poached, grilled, fried, baked. Serve in a roux sauce, or in pastry (e.g. Russian fish pie), curry, with sweet and sour sauce, etc.
Oily	Bake, fry, grill, poach. Serve with a sharp sauce, e.g. tartare; fry in oatmeal; stuff with breadcrumbs, herbs, orange, etc., and bake.
Shell	Serve as a starter, e.g. prawn cocktail, or in soups, salads, fried in batter, with rice, etc.

Storage

Fish should be eaten as soon as possible after purchase,. and should be stored in the coldest part of the refrigerator (but not the ice box), well wrapped, to prevent the strong odours from contaminating other foods.

It is not advisable to freeze fresh fish bought from a shop as it must be frozen while very fresh.

Preserving fish

Apart from being frozen, fish can be preserved by.

Curing

Smoking is carried out over wood smoke in carefully controlled conditions. The smoke develops flavours in the fish and has a preservative

Using gelatine in food preparation

Proportions to use

12.5 g or 3 rounded tsp gelatine
575 ml water or other liquid

To dissolve gelatine

1. Sprinkle the gelatine into the liquid in a jug.
2. Stand the jug in a pan of hot water, stir, and leave to dissolve.
3. The gelatine is ready for use when it is clear and transparent.
4. Do not boil the gelatine liquid.

Adding gelatine to a mixture

The dissolved gelatine should be poured slowly into the mixture, stirring all the time, to incorporate the gelatine completely. The mixture should not be icy cold as the hot gelatine liquid will not mix well and will form 'ropey' globules. This will prevent it from setting properly.

Fresh pineapple should be cooked first if used in a dish that is to be set with gelatine. This is because pineapple contains an enzyme called **bromelain** which prevents gelatine from setting. Heating inactivates the enzyme.

Gelatine should not be added to very hot milk as it will cause it to curdle.

Gelatine can be used to help jam to set, but it will not keep so long if this is done.

Storing gelatine

Gelatine absorbs moisture readily and so should be stored in a cool, dry place. It will also absorb odours from other foods, and so should be kept in an air-tight container.

BSE

BSE, (bovine spongiform encephalopathy) or 'mad cow disease' is a fatal disease which attacks the brain and spinal cord of cattle. It was first identified in the UK in 1986.

Some health experts are concerned that a form of BSE could be transferred to humans if they eat the meat of affected animals, although this is by no means certain. Since 1988, very strict measures have been in place in the UK to control the disease and make sure that meat from affected animals does not enter the food chain.

The cause of BSE in cattle is unclear, but it is thought that using brain and offal from sheep in cattle feeds may have been the prime factor. This practice has now been stopped, and the government also ordered that all affected cattle must be destroyed when the disease was made notifiable in 1988. Much is still unknown about BSE, and research is continuing into its causes and effects.

The importance of gelatine in the diet

Gelatine is a protein, but although it is an animal protein, it has a low biological value (see p. 3). It is not, therefore, as useful in the diet as was once thought.

Gelatine can be used to set jam for people suffering from diabetes, where sugar intake has to be limited.

Importance of cheese in the diet

Cheese is a relatively concentrated source of protein, and an important source of calcium, retinol (vitamin A), and riboflavin. Over 90% of the cheese is digested, so there is little wastage. Cheese can be included in most meals for all age groups, and is a useful food for snacks and packed meals.

In response to advice to reduce the amount of fat in the diet, it is now possible to buy reduced-fat cheeses.

Nutritive value

	Cheddar cheese	Cottage cheese
	%	%
Protein	26.0	13.6
Fat	33.5	4.0
Carbohydrate	trace	1.4
Minerals	3.4	1.4
Water	37.0	78.8

Effect of heat on cheese

When hard cheeses are heated, the fat first melts, and the protein (caseinogen) continues to coagulate. Overheating causes the protein to toughen and become stringy, reducing its digestibility. Eventually the cheese will burn.

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Bulletin of
First DietCare Center

Vol. 3 No. 2 February 1999

FIRST DIETCARE CENTRE FIRST DIETCARE CENTRE

Thawing frozen food

Some frozen foods, e.g. vegetables, beefburgers, fish, can be cooked from frozen. Foods such as cakes must be thawed so that they can be cut.

Some foods *must* be thawed completely before cooking, for safety reasons. This includes meat (especially pork) and poultry, shellfish, and cream. Such foods may harbour bacteria (especially salmonella - see pp. 154–8), and if insufficiently thawed, the food will not get properly hot when it is cooked. This will encourage bacterial growth and reproduction, which may cause food poisoning if the cooked food is kept warm. This is more likely in large volumes of food, such as poultry. Large turkeys should be thawed for at least 24 hours in a cool place, and chickens for at least eight hours. There should be no signs of ice when the poultry has been thawed.

Most foods should be thawed at room temperature. This takes several hours for large packs, and must be allowed for when using foods from the freezer.

Once thawed, raw food *should not be refrozen*, unless it is cooked first, as this may lead to microbial growth and food poisoning.

Storage times for frozen foods

Different foods will keep for different lengths of time in the freezer, and it is important not to exceed storage times. The following list gives storage times for foods stored at -18°C:

HEALTH CARE

Food	Storage time
Vegetables	12 months
Fruit	12 months
Raw meat	
beef and lamb	12 months
mince and offal	2 months
pork	9 months
unsmoked bacon	6 weeks
sausages	6 weeks
smoked bacon	4 weeks
vacuum-packed rashers	3 months
bacon joints	3 months
Poultry	
chicken	12 months
duck	6 months
Fish	
white, filleted	8 months
oily	4 months
Shellfish	2 months
Whipped cream	2 months
Hard cheese	3 months
Cakes	
fatless	6 months
with fat	4 months
Pastry	
cooked	6 months
uncooked	3 months
Bread	3 months
Soups, sauces	4 months
Stews	2 months
Meat loaves, pâtés	1 month
Ice cream	3 months

HEALTH CARE HEALTH CARE HEALTH CARE HEALTH CARE

PROTEIN AND CARBOHYDRATES

High amounts of daily protein cause a high incidence of carcinogenesis in animals.[93] In many animal studies carcinogenesis was suppressed when animals were fed levels of protein that were at the minimum or below the minimum required for optimal growth.

There has been a fair amount of epidemiological human data to support that total protein intake will correlate with the incidence of and mortality from cancers of various sites.[94] This correlation has been seen for breast cancer[95-97] and colon and rectal cancer.[98,99] There has also been a weaker association between high protein intake and other cancers, specifically pancreatic cancer, prostate cancer, and endometrial cancer.

Many of the studies included the consumption of fat as well as protein. Because there is not one but two variables, it is not possible to say with any certainty that high protein per se will be a factor in the cancers described.

The evidence linking pure sugars to the incidence of cancer is much weaker. A high dietary intake of refined sugar was one of the dietary components linked to the increased incidence of breast cancer in several studies.[100,101]

To date, the evidence from both epidemiological and laboratory studies is too inconclusive to suggest any role for carbohydrates in carcinogenesis. But as we have already discussed, excessive carbohydrate ingestion contributes to obesity, which, in turn, has been implicated in carcinogenesis.

کل راحت بیکری پر کون
کھا رہے تھے پتا نہیں کس
ہڈی کے بنے ہو
تمہاری والدہ کا بلڈ پریشر
تمہاری وجہ سے
ٹھیک نہیں ہو رہا
ہر روز شکایت آتی
ہے کہ تم کلاس میں
بیہوش ہوتے ہو
ہم مریں یا جئیں تمہیں
کوئی پرواہ نہیں
تمہاری فکر میں میرا
کاروبار تباہ ہو رہا ہے
ڈاکٹر کی سنتے ہو نہ ہماری شوگر
چیک کرتے ہو اور نہ ہی وقت
پر ٹیکہ لگاتے ہو
۵
۱۱۱۵
بھینس میری وجہ سے
دودھ نہیں دے رہی
محلے کے کتے
میری وجہ سے
بھونکتے ہیں
میری بیماری ہے میں خود
ہی نپٹا لوں گا آپ اپنے
کاروبار کی فکر کریں

First Dietcare Centre
Under the Guidance of American Dietetic Association (ADA), USA

Herbs

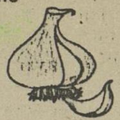
Herbs have long been used to flavour food, and are believed by many people to have medicinal properties. Normally the leaves are used in food preparation, as they contain aromatic oils which are released when the leaves are crushed or chopped. Occasionally flowers, roots, or seeds are used.

Herbs usually grow in temperate climates, and can easily be grown in gardens or indoors in pots. They can be dried or frozen for use all year round and can be used raw or cooked.

A bouquet garni is made from a variety of fresh or dried herbs (tarragon, mint, rosemary, sage, parsley, thyme) tied in muslin. It is added to soups, stews, etc., for flavouring, then removed before the dish is served.

Some commonly used herbs include:

Herb	Uses
Angelica 	The stems are candied (preserved in sugar) and used to decorate cakes, etc. The root can be used to flavour drinks.
Basil 	The leaves are used for salads; tomato, egg, or mushroom dishes; pasta dishes; and in sauces.
Bay 	The leaves are used in meat and fish stews, soups, and marinades.
Chives 	The leaves are used for salads, vegetable soup, omelettes, cream cheese, and meat broths.
Dill 	The leaves are used with fish, salads, and sandwich fillings. The seeds can be used in stews and bean soups.

Herb	Uses
Garlic 	The bulb is used and is divided into cloves. It has a strong flavour and is used sparingly in stews, soups, salads, butter, mayonnaise, etc.
Mint 	The leaves are served chopped in vinegar with roast lamb, and used in water ices, drinks, and fruit salads.
Oregano 	The leaves are used for meat loaves, marrows, stuffed green peppers, pizzas, and pasta dishes.
Parsley 	The leaves are used for stuffings, sauces, soups, and salads. It is a good source of vitamin C if used in large quantities.
Rosemary 	The leaves are served with roast lamb or chicken, fish, eggs, and cheese.
Sage 	The leaves are used for stuffings, sage and onion sauce, and sage Derby cheese.
Tarragon 	The leaves are used to flavour vinegar, sauces, and mustards, or are cooked with chicken dishes.
Thyme 	The leaves are used in stuffings, soups, stews, herb sauces, and with vegetables.

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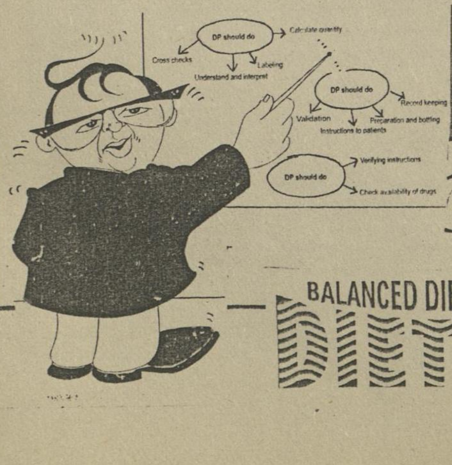

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Bulletin of
First DietCare Center

Vol. 3 No. 3 March 1999

Choice of food

People who are fortunate enough to have a choice of food to eat (i.e. people in most affluent countries) have the opportunity to choose a healthy and varied food intake, and to control their eating habits. How that choice is made, however, depends on several different factors, some of which may be more influential than health considerations.

Personal likes and dislikes

Most people enjoy food. However, we all choose certain foods more often than others. Reasons for avoiding particular foods may include:

1. Dislike of the flavour, appearance, or texture.
2. Disagreement with the way the food is produced, e.g. using crates for rearing calves to produce veal.
3. Dislike of the way that food is prepared or cooked.
4. Associating the food with feeling ill, e.g. because of an allergy or past food poisoning.

Food presentation

Food that is well prepared, well cooked, and attractively presented is more likely to be chosen and enjoyed.

Religious and moral beliefs

Religious beliefs are very important to many people, and some religions have specific rules about what should and should not be eaten.

Customs, traditions, and festivals

Many occasions and ceremonies – e.g. funerals, marriages, religious festivals, harvests – are celebrated with feasts or fasts (not eating food for a specific amount of time), or special meals and foods only prepared at that time. Some examples are given on pp. 70–1.

Availability of food

Affluent countries such as the UK, USA, France, and Germany, have plenty of food to feed their populations. Such countries grow some of their own food and import (bring in) the rest from around the world. Some countries grow little food (and are too poor to import enough) for various reasons

Variety of food

Many foods in the UK and other countries are imported from all around the world, making food choice even greater. People can travel abroad more easily, and try foods, which then may become available back at home. Recipe books, prepared dishes, and media coverage also encourage people to try new foods.

Cost of food

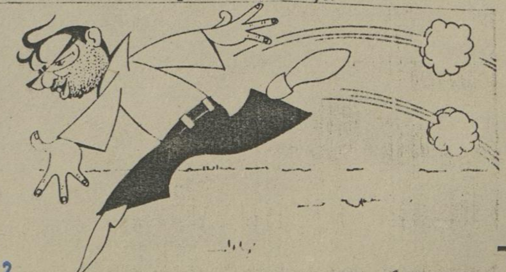
The price of food depends on many factors, including:

1. The cost of growing, harvesting/slaughtering, storing, processing, distributing, packaging, advertising, and selling the food.
2. Seasonal variations in fresh foods, e.g. soft fruit is cheaper in the summer when it is most available.
3. Variations in the quality of a particular food, e.g. tougher cuts of meat that require more cooking are generally cheaper.

Food technology

Food technology has increased food choice in various ways, including:

1. Producing cheaper versions of basic foods, e.g. margarine instead of butter.
2. Producing new types of food from unusual sources, e.g. quorn from mycoprotein (see pp. 129–30).
3. Producing quick-to-prepare foods and ready-prepared meals.
4. Increasing food production by developing new agricultural practices, e.g. hormone injections to cattle to improve milk yield, genetic engineering to produce high-yield cereal plants.
5. Increasing the shelf-life of foods to avoid wastage and preserving the food in good condition.
6. Improving packaging to enable more foods to be easily eaten away from the home, e.g. ring-pull cans, plastic food trays.



FIRST DIETCARE CENTRE
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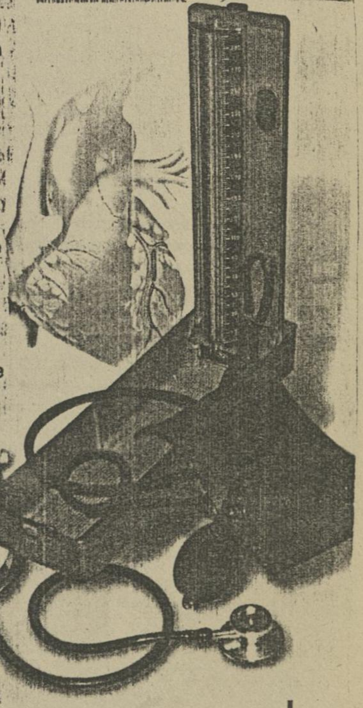
Spices

Spices have been used throughout history all over the world, and have for many centuries been an important trading commodity.

Spices are mostly grown in tropical countries, and tend to be derived from dried roots, seeds, or barks. They are used in food preparation either whole, crushed, or powdered. They generally have a strong aromatic flavour. They are used in small quantities so they do not contribute significantly to the diet, although curry powder contains a useful amount of iron, probably partly obtained from the iron pots in which it is prepared.

There are many spices in use, and these are some of the most common:

Spice	Uses
Allspice	Savoury sauces, marinades, Middle-Eastern meat dishes, pickling.
Caraway seeds	Used in bread, cakes, and cheeses, particularly in German and Jewish cooking.
Cayenne pepper	Made from ground chillies. A hot, fiery pepper, used sparingly in cheese dishes and with shellfish.
Chillies	Used in hot pickles, curries, spicy dishes, chilli and tabasco sauces, and chilli con carne.
Chinese five spice	A mixture of star anise, anise pepper, fennel, cloves, and cinnamon. Used in Chinese cookery.
Cinnamon	Comes from the bark of a tree. Used in mulled wines, cakes, apple pies, biscuits.
Cloves	These are flower buds from the myrtle tree. Used for bread sauce, baked gammon, etc.
Coriander	The seeds and leaves are used in curries and other spicy dishes.
Curry powder	A mixture of several hot spices. Used in mulligatawny soup and savoury dishes.
Ginger	The root is used powdered, crystallized, or whole, in cakes, with melon, etc.
Mustard	The seeds are used for mustard powder and in pickles. Mustard is served with meat, cheese, etc, and used in salad dressing.
Nutmeg	The seed is sold whole or powdered. Used in egg custards, cheese sauce, milk puddings, moussaka.
Paprika	Ground sweet red peppers; not usually very hot. Used in Hungarian cookery, e.g. goulash, and with egg and shellfish as a garnish.
Peppercorns	Can be white, black, green, or red. Served with most meals, powdered or freshly ground.
Turmeric	This is made from the root of a plant and is used in curries, or for colouring rice yellow.
Vanilla	Vanilla plants are a type of orchid and the dried seed pods are used either whole or as an essence for cakes, puddings, etc.



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BALANCED DIET, HEALTHY LIFE

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Bulletin of
First DietCare Center

Vol. 3 No. 4
April 1999

Risk Factor Assessment Test to Determine Cancers

High Risk	2 or more A's + any number of B's or C's or 1 A + 4 or more B's + any number of C's
Moderate Risk	1A + 3 or fewer B's + any number of C's or 4 or more B's + any number of C's or 2 or 3 B's + 2 or more C's
Low risk	No A's or No B's or no C's or 1 B + 2 or fewer C's or 2 or fewer C's

A person in a high-risk category will not necessarily develop cancer. The high-risk category indicates only that a person in it is more at risk than a person in another category.

Following are a few examples of persons with various risk factors, their relative degrees of risk for developing cancer, and what they should do to modify those risks and thereby reduce their chance of developing cancer (and/or cardiovascular disease). After each risk factor the score is indicated in parentheses.

What can *you* do to reduce *your* risk for cancer? You have now identified the problem areas that need modification. Simple preventive measures can be taken to help you reduce your chances of developing cancer or cardiovascular disease. This book will show you how you can make relatively minor adjustments in your lifestyle to lessen your risk. Maintaining a good weight, eating a healthful diet (one that is low in animal fat, low in cholesterol, and high in fiber), choosing not to smoke or drink alcoholic beverages, avoiding or limiting exposure to the sun—all of these are just a few of the ways you can protect yourself from cancer. You must strive to maintain good health. Good health is no accident.

SELF-TEST

What is your risk of developing cancer? Take the following Cancer Risk Factor Assessment Test to determine your risk according to your diet, weight, age, lifestyle, and other factors discussed in this chapter. After you assess which factors pose a risk, you can begin to modify them according to my recommendations. Then take the test again to see if your overall risk has been reduced.

The test consists of a list of cancer risk factors, several statements associated with each risk factor, and a specified score associated with each statement. Choose the statement that most nearly applies to you and write its score in the blank. After going through the questionnaire, add up your scores. The zero scores won't count in the total.

Cancer Risk Factor Assessment Test

Risk Factor **Score**

1. Nutrition

- If during 50% or more of your life two or more of the following apply to you:
  (1) one serving of red meat daily (including luncheon meat);
  (2) 6 eggs per week;
  (3) butter, milk, or cheese daily;
  (4) little or no fiber foods (3 gm or less daily);
  (5) frequent barbecued meats;
  (6) below-average intake of vitamins and minerals. Score A ___
- If during 50% or more of your life two or more of the following apply to you:
  (1) red meat 4–5 times per week (including luncheon meat);
  (2) 3–5 eggs per week;
  (3) margarine, low-fat dairy products, some cheese;
  (4) 4–15 gm of fiber daily;
  (5) average intake of vitamins and minerals. Score B ___
- If during 50% or more of your life two or more of the following apply to you:
  (1) red meat and 1 egg once a week or none at all;
  (2) poultry or fish daily or very frequently;
  (3) margarine, skim milk, and skim milk products;
  (4) 15–20 gm of fiber daily;
  (5) above-average intake of vitamins and minerals. Score 0 ___

2. Weight

Ideal weight for men is 110 lbs plus 5 lbs per inch over 5 ft. For women, ideal weight is 100 lbs plus 5 lbs per inch over 5 ft.

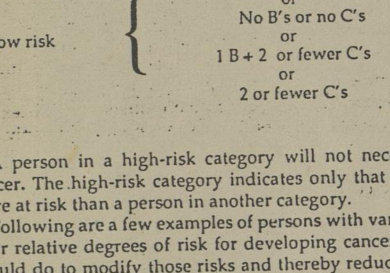
- If you are 25 lbs overweight. Score B ___
- If your are 10–24 lbs over. Score C ___
- If you are less than 10 lbs over. Score 0 ___

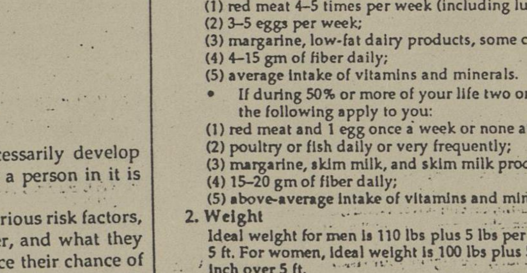
3. Tobacco

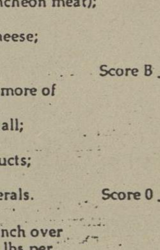
- Smoke 2 packs or more per day for 10 years or more. Score A ___
- Smoke 1–2 packs for 10 years or more, or quit smoking less than a year ago. Score A ___

Please turn over

FIRST DIETCARE CENTRE







Cont..... SELF TEST

FIRST DIETCARE CENTRE

- Smoke less than 1 pack for 10 years or more or smoke pipe or cigar. Score B ___
- Smoked 1–2 packs per day, a pipe, or a cigar but stopped 7–14 years ago. Score B ___
- Chew or snuff tobacco. Score B ___
- Inhaled others' smoke for 1 or more hours/day up to age 25. Score B ___
- Inhaled others' smoke for 1 or more hours/day from age 25 on. Score C ___
- Never smoked, quit smoking 15 years ago, or never inhaled others' smoke. Score 0 ___

4. Alcohol

- If you drink 4 oz or more of whiskey daily or equivalent alcohol content in other beverages. Score B ___
- If you drink 2–4 drinks per week. Score C ___
- If you drink 4 oz or more of whiskey daily or the equivalent alcohol content in other beverages *and* also:
  Smoke less than 1 pack per day, or chew or snuff tobacco Score B ___
  Smoke 1–2 packs per day, pipe, or cigar. Score A ___
  Smoke 2 or more packs per day. Score A ___
- If you do not drink at all. Score 0 ___

5. Radiation exposure

- If you received multiple X rays or radiation treatments, or if you were exposed to radioactive isotopes used for diagnostic workups, or radioactive weapons. Score C ___
- If you are fair-skinned and sunburn easily. Score B ___
- If neither applies. Score 0 ___

6. Occupation

- If you are a radiologist, chemist, painter, uranium or hematite miner, luminous-dial painter, or a worker in the following industries: leather, foundry, printing, rubber, petroleum, furniture or cabinet, textile, nuclear, slaughterhouse, or plutonium. (The longer your exposure, the greater your risk.) Score B ___
- Never was one of the above workers. Score 0 ___

7. Chemicals

- If you have worked directly with one of the following chemicals: aniline, acrylonitrile, 4-aminobiphenyl, arsenic, asbestos, auramine manufacturing, benzene, benzidine, beryllium, cadmium, carbon tetrachloride, chlormethyl ether, chloroprene, chromate, isopropyl alcohol (acid process), nickel, mustard gas, or vinyl chloride. (The longer your exposure, the higher your risk.) Score A ___
- If you have worked indirectly with one of the above chemicals. Score C ___
- Never worked with one of the above. Score 0 ___

8. Sexual-social history

- If you are a female who started having sexual intercourse before age 16 and has had many male partners, particularly uncircumcised. Score C ___
- If you are a sexually active male homosexual who has had many male partners and/or uses amyl nitrite. Score C ___
- If neither applies. Score 0 ___

9. Immunity, drugs, and hormones

- If your physician said you have a severe deficiency in your immune system, or you have received an organ transplant. Score A ___
- If you've taken 1 or more of the following for a prolonged period of time: chlorambucil, cyclophosphamide, melphalan, or high-dose steroids (anticancer drugs). Score A ___
- If you have taken one or more of the following for a prolonged period of time: phenacetin, thiotepa, diethylstilbestrol (DES), birth control pills (conjugated estrogens), or 17 methyl-substituted androgens. Score B ___
- If you had early onset of menses or late onset of menopause, or never had menses at all. Score B ___
- If you were first pregnant late in life or never at all, or had fibrocystic breast disease. Score C ___
- If none of the above apply. Score 0 ___

10. Geography

- Based on Figure 1.1 in Chapter 1, if during most of your life you lived in one of the states with the most cancer deaths. Score B ___
- If during most of your life you lived in a state that has a moderate number of cancer deaths. Score C ___
- If during most of your life you lived in a state with the least number of cancer deaths. Score 0 ___

11. Age

- If your age is 70 or more. Score B ___
- If your age is 55 to 69. Score C ___
- If your age is 55 or under. Score 0 ___

12. Personal history

- If you had cancer. Score B ___
- If you never had cancer. Score 0 ___

13. Family history

- If one or more close family members had cancer. Score B ___
- No family history of cancer. Score 0 ___

14. Exercise

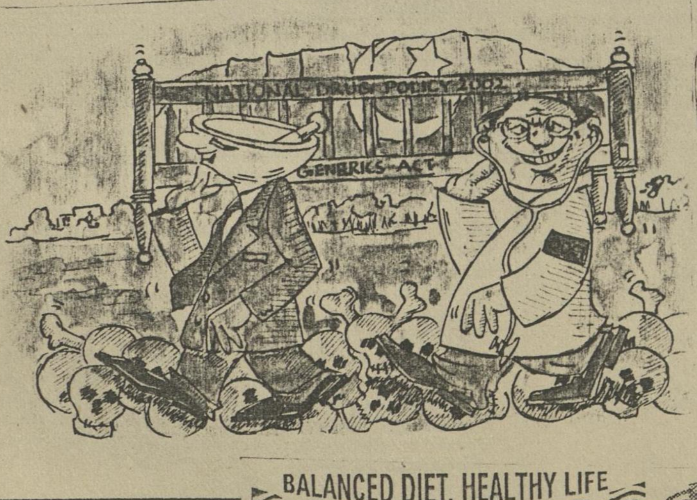
- If you exercise very little or not at all. Score C ___
- If you exercise 3 or more times a week and get your heart rate 50% higher than normal for at least 20 min. Score 0 ___

15. Stress

- If you are frustrated waiting in line, easily angered, and unable to control stress. Score C ___
- If you are comfortable when waiting, easygoing, and able to control stress. Score 0 ___

TOTAL SCORE: ___A's; ___B's; and ___C's.

To evaluate your score, see page 26 under "Where Do You Stand?"



FIRST DIETCARE CENTRE

Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

BALANCED DIET, HEALTHY LIFE

DIETCARE

Bulletin of
First DietCare Center

Vol. 3 No. 5 May 1999

The Simone Ten-Point Plan

EPISODE-1

Cancer, the most dread of all diseases, will affect one out of every three Americans. Eighty to 90 percent of all cancers are related to nutritional factors (a high-animal-fat, high-cholesterol, low-fiber diet), lifestyle (tobacco smoking, excessive alcohol consumption), the environment (chemical carcinogens, ozone, air pollution, industrial exposure), and some hormones and drugs. As we have learned, many of these cancer risk factors are risk factors for developing and worsening cardiovascular diseases as well. Since we can now identify many of these factors, we should modify them accordingly to lessen our risk of developing cancer and cardiovascular diseases. The likelihood of drastically increasing the number of cancer cures by conventional cancer therapies in the foreseeable future is not great, even though some of the very best American minds and technolpgies are involved in cancer research.

Cancer is the most complex group of diseases known, and there are many different causes. We must all do our part to try to *prevent* cancer because that is how the number of new cancer cases can be substantially reduced. Americans need to know the risk factors for cancer and cardiovascular diseases. Adults who become aware of these risk factors and then modify their diet and lifestyle accordingly will reduce their risk of developing cancer and cardiovascular diseases. Table 22.1 is helpful because it provides a check list of the risk factors for cancer and heart disease that you can control and cannot control. As you now know, you have direct control over the majority of them.

Children will benefit the most from properly modified nutritional factors and daily habits. Nutrition education should be part of a child's education throughout the school years, because nutritional practices and habits are easily modified in youth. Nutrition is a topic of intense interest to teachers and parents as well. The main risk factors for the development of cancer and cardiovascular disease are nutrition and tobacco smoking. If parents set the example of correct nutritional practices, no smoking, and very modest alcohol consumption, their children will continue these practices throughout their own lives. There will be a consequent decrease in the incidence of cancer and cardiovascular disease.

What can you do to help yourself? My recommendations to modify your risk factors for cancer as well as cardiovascular disease will not be anything like the popular fad diets or the crash schemes for weight reduction, longevity, or reversal of cardiovascular or other diseases.[1] Primary prevention and early detection are the goals of my plan for risk-factor modification—no fads, no claims for disease-free longevity. Simply, I have presented the current body of scientific information concerning cancer and cardiovascular-disease risk factors, and now will discuss how those risk factors can be modified. The more closely you adhere to my recommendations, the better off you will be. The preponderance of information suggests the following Simone Ten-Point Plan for prevention of cancer and heart disease.

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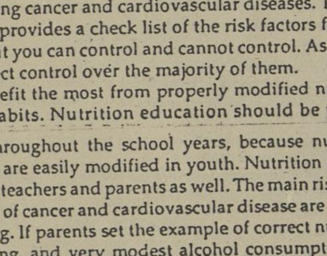

Controllable Risk Factors for Cancer and Heart Disease

Risk Factors	Controllable
• Nutritional	Yes
Fat Intake	Yes
Fiber Intake	Yes
Vitamin/Mineral Intake	Yes
Food Additives/Contaminants	Yes
Caffeine Intake	Yes
• Obesity	Yes
• Tobacco Use	Yes
• Alcohol Use	Yes
• Drug Use	Yes
• Pesticides	Yes
• Environmental Factors	
Air Pollution (Outdoor, Ozone Depletion, Acid Rain)	Yes
Indoor Pollution	Yes
Water Treatment and Pollution	Yes
Electromagnetic Fields	Yes
• Radiation	
Sun Exposure	Yes
Suntanning Booths	Yes
Multiple Unnecessary X Rays	Yes
• Sexual-Social	
Female Promiscuity	Yes
Male Promiscuity	Yes
AIDS Spread	Yes
• Hormonal Factors	
Menstrual History (fats trigger early menarche)	Yes/No
First Pregnancies	Yes
Abortion First Trimester, First Pregnancy	Yes
Benign Breast Disease	Yes
Repair of Undescended Testicle	Yes
DES	Yes
Oral Contraception	Yes
Estrogen Use	Yes
Androgen Use	Yes
• Sedentary Lifestyle	Yes
• Stress	Yes
• Occupational Factors	Yes
• High Blood Pressure	Yes
• Age	No
• Physical Examination	Yes

POINT 1: NUTRITION

Maintain an ideal weight. Remember, repeated fluctuations in your weight can, per se, increase your risk for heart disease and death. You will find several medically sound weight-reduction diets in the next chapter, along with a table of foods and their compositions.

Consume a low-animal-fat, low-cholesterol diet. Eating the recommended foods under this heading will provide you with more than enough fats necessary for all bodily functions and at the same time modify disease risks.

- *Eat poultry.* White meat is best. Remove all skin before cooking. Chicken, turkey, Cornish hen, and game birds are good. Do not eat any fatty poultry like goose or duck.
- *Eat fish.* All fish are recommended except shellfish, sardines, mackerel, and fish canned in oil, which are high in fat or cholesterol.
- *Limit red meat.* Eat only lean red meat and limit consumption to about once every ten days. Eliminate all fatty meats like bacon, fatty hamburger, spareribs, sausage, luncheon meats, sweetbreads, hot dogs, kidney, brains, liver, etc. Do not eat smoked or salt-cure foods. Limit the amount of barbecued and charcoal-broiled foods.

See next....

cont....

- *Limit dairy products.* Only nonfat products should be eaten: skim milk, skim powdered milk, evaporated skim milk, nonfat yogurt and buttermilk, and cheeses made only with skim milk. Eat only a few egg whites per week or a cholesterol-free egg substitute a couple of times a week. Eliminate whole and low-fat milk and the products made from them, cream, half and half, all cheeses containing greater than 0 percent fat, whipped cream, etc. Do not eat whole eggs.
- *Eliminate all oils and fats* including butter, margarine, meat fat, lard, and all oils. Both saturated and polyunsaturated fats are detrimental.
- *Watch garnishes and sauces.* Use products that do not have fats, oils, or egg yolks. Dry white wine may be used in cooking, and you can also use ketchup and vinegar. Do not use salad dressings, pickle relish, prepared gravies and sauces, mayonnaise, sandwich spreads, or other products containing fats, oils, or egg yolks.

Eat a high-fiber diet. Consume foods that will give you 25 to 30 grams of fiber per day. Consult Chapter 23 for the fiber content of foods. As you will learn, it is very easy to choose foods that will give you a total of 30 grams of fiber a day. High-fiber cereals are the best.

Vegetables of the Brassicaceae family provide fiber and induce enzymes to destroy certain carcinogens. These include Brussels sprouts, broccoli, and cabbage. You can eat whole or lightly milled grains like rice, barley, and buckwheat. Whole wheat bread and whole wheat pasta, cereals, crackers, and other grain products can also be eaten. Unsweetened fruit juices and unsweetened cooked, canned, or frozen fruit can also be eaten.

Do not eat cooked, canned, or frozen fruit with added sugar, all jams and jellies, fruit syrups with added sugar, fruit juices with added sugar, bleached white flour, and grain products made with added fats, oils, or egg yolks. Avoid butter rolls, commercial biscuits, muffins, doughnuts, sweet rolls, cakes, egg bread, cheese bread, and commercial mixes containing dried eggs and whole milk.

Vitamins and minerals. You should supplement your balanced diet with vitamins and minerals in the proper dosages and combinations so that risks are even further modified. The formulations I have developed are outlined in Chapter 6. They contain effective doses of all the vitamins and minerals, especially antioxidants. For more information, see Afterword.

Salt. Eliminate table salt. Add only a minimal amount of salt while cooking. Most condiments, pickles, dressings, prepared sauces, canned vegetables, bouillon cubes, pot pies, popcorn, sauerkraut, and caviar have high amounts of salt in them.

Food additives. Avoid all foods containing nitrates, nitrites, or other harmful additives, or that were processed using a harmful technique.

Snacks and desserts. Acceptable snacks or desserts include fresh fruit and canned fruit without added sugar, water ices, gelatin, and (sparingly) puddings made with skim milk. Do not eat commercial cakes, pies, cookies, doughnuts, and mixes; coconut or coconut oil; frozen cream pies; potato chips and other deep-fried snacks; whole-milk puddings; ice cream; candy; chocolate; or gum with sugar.

Beverages. Acceptable beverages are skim milk or nonfat buttermilk, mineral water, unsweetened fruit juices, and vegetable juices. Avoid caffeine-containing beverages—coffee, tea, cola, etc.

Dining out. Call the restaurant to see if they can accommodate your needs as outlined here. Airlines and ocean liners will also help you. Request that the chef not cook with any salt products (Chinese food is high in sodium). Use lemon juice or vinegar on your salad.

Continued........see next issue

Simone Ten-Point Plan to Decrease Your Risk of Cancer and Heart Disease

POINT 1: NUTRITION.

- Maintain an ideal weight. Lose weight even if it is just 5 or 7 pounds.
- Decrease the number of daily calories.
- Eat a low-fat, low-cholesterol diet: fish, especially those rich in omega-3 fatty acids; poultry without skin; and skim-milk products (not whole, 2 percent, or 1 percent milk). Limit red meat, including luncheon meat. Limit oils and fats.
- Eat lots of fiber (25 to 30 grams a day). Include fruits, vegetables, cereals, and a supplement of fiber to obtain a consistent amount each day (guar gum, bran, etc.). High-fiber cereals are the best.
- Supplement your diet with certain vitamins and minerals in the proper dosages and combinations for your lifestyle.
- Eliminate salt and food additives.
- Limit barbecued, smoked, or pickled foods.
- Avoid caffeine.

POINT 2: TOBACCO. Do not smoke, chew, or snuff. Do not inhale other people's smoke.

POINT 3: ALCOHOL . Avoid all alcohol or consume *only* minimal amounts (less than one drink per week).

POINT 4: RADIATION. Have X rays taken only when needed. Use a sunscreen with an SPF of at least 15 when sunbathing.

POINT 5: ENVIRONMENT. Keep air, water, and work place clean. Regulate electromagnetic fields.

POINT 6: SEXUAL-SOCIAL, HORMONES, DRUGS. Avoid promiscuity, hormones, and any unnecessary drugs.

POINT 7: LEARN THE SEVEN EARLY WARNING SIGNS.

- Lump in breast.
- Change in wart or mole.
- Nonhealing sore.
- Change in bowel or bladder habits.
- Persistent cough or hoarseness.
- Indigestion or trouble swallowing.
- Unusual bleeding or discharge.

POINT 8: RETAKE SELF-TEST (see inset in Chapter 2). Note your disease risk factors and symptoms that may indicate cancer or heart disease.

POINT 9: EXERCISE AND RELAX REGULARLY.

POINT 10: TAKE EXECUTIVE PHYSICAL YEARLY.

First Dietcare Centre
Under the Guidance of American Dietetic Association (ADA), USA
American Award ABI Laureate

BALANCED DIET, HEALTHY LIFE
DIETCARE

Bulletin of
First DietCare Center

Vol. 3 No. 6 June 1999

The Simone Ten – Point Plan (Episode 2)

POINT 2: TOBACCO

Do not smoke! Do not chew or snuff tobacco. If you are smoking, quit now. There is no easy, painless way to quit. The best way is simply to go "cold turkey" without tapering off or using any of those expensive smoke-ending courses.

The American Lung Association can help you. Call this organization. Remember, cigarette smoke also endangers the health of nonsmokers.

As a nonsmoker, demand that smokers not smoke in your presence, especially in a public or work-related area.

POINT 3: ALCOHOL

Abstain from alcohol consumption or reduce to a minimum (less than one drink per week). Remember, consumption of even modest amounts of alcohol in a week is a risk factor for breast cancer and other cancers.

POINT 4: RADIATION

X-ray exposure (ionizing). X-ray pictures are certainly needed in many circumstances and should be taken when a physician recommends it. The equipment is getting better and less radiation is delivered to a person per film now. However, there are hypochondriacs who want X-ray studies, and some people involved in motor-vehicle accidents also want X rays done for possible legal purposes. These people receive unnecessary radiation exposure.

See a physician if you had radiation to your head and neck as a child.

Sunlight. Sunscreens should be used when you sunbathe. Remember, sunlight causes skin cancer and ages skin rapidly. Avoid suntanning booths.

POINT 5: ENVIRONMENTAL EXPOSURE

Environmental protection standards for air, water, and the work place should be rigorously observed.

Several specific industries, such as the manufacturing of boots, shoes, furniture, and cabinets, are risk factors for the development of cancer of the nasal sinuses. Other industries that use certain chemicals (see Chapter 2, Table 2.2) pose an increased risk for persons working with those chemicals. All these industries have safety standards that should be strictly observed. For instance, a person working with asbestos (insulation, brake lining, etc.) should wear a mask to protect the respiratory and gastrointestinal systems. Frequently, workers find a mask to be a nuisance and will not wear one, especially on hot days. This simply increases their risk of developing cancer. Firefighters are indirectly exposed to many of these chemicals when objects made from them burn.

Avoid prolonged exposure to household cleaning fluids, solvents, and paint thinners. Some may be hazardous if inhaled in high concentrations. Pesticides, fungicides, and other home garden and lawn chemicals are also potentially dangerous.

The dangers of electromagnetic force fields need to be addressed. "Safe distance" codes should be established for housing, offices, hotels, etc.

POINT 6: SEXUAL-SOCIAL FACTORS, HORMONES, AND DRUGS

Female promiscuity. The earlier the age of starting sexual intercourse and the more male sexual partners a female has (particularly uncircumcised partners), the higher is her risk of developing cancer of the cervix.

Hygiene in uncircumcised males. Bathe frequently. Poor hygiene may lead to cancer of the penis.

Male homosexuality and promiscuity. Practice "safe" sex.

Benign breast disease. Take steps to minimize your risk by following this Ten-Point Plan.

Birth control pills. Birth control pills should not be used, nor should estrogens be used to treat other conditions. Other means of birth control should be sought.

DES exposure. Report to a physician if you yourself were exposed to DES, or if you are the daughter or son of a DES-exposed mother.

Androgens. Androgens (those substituted with a methyl compound in the seventeenth position) should not be used for body building or any other purpose. Build your body by working out.

Drugs. Avoid all unnecessary drugs. Take drugs only when they are prescribed by your physician. Check to see if the drug interferes with vitamin function.

POINT 7: LEARN THE SEVEN CANCER WARNING SIGNS

- A lump or thickening in breast.
- A change in a wart or mole.
- A sore that does not heal.
- A change in bowel or bladder habits.
- A persistent cough or hoarseness.
- Constant indigestion or trouble swallowing.
- Unusual bleeding or discharge.

If any of these signs appear, contact your physician immediately.

POINT 8: CANCER QUESTIONNAIRE*

If, after answering these questions, you find you have three or more, or all, of the possible "yes" answers in any one category, consult your physician.

	No	Yes
General		
1. Have you ever been told by a physician that you had cancer? If yes, cancer of what?________	____	____
2. Have any of your blood relatives had cancer? If yes, cancer of what?________	____	____
3. Have you lost 10 to 15 pounds over the past 6 months without knowing why?	____	____

*Adopted from Cancer Prevention and Detection Screening Program.

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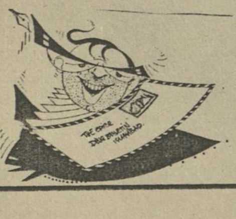
باتیں کرتے ہو۔ کہیں تمہیں
شوگر نہ ہو جائے

See next page —

Continued… Simone Plan

	No	Yes
Lungs		
4. Have you coughed up blood in the past several weeks?	___	___
5. Have you had a chronic daily cough?	___	___
6. Have you been told that you have emphysema?	___	___
7. Have you had pneumonia twice or more in the past year?	___	___
8. Have you ever smoked?	___	___
9. Did you quit smoking less than 15 years ago?	___	___
10. Do you smoke now?	___	___
Cigarettes: Number of packs/day ___.		
Number of years ___.		
Cigars: Number of cigars/day ___.		
Pipe: Number of bowls/day ___.		
11. Do you inhale others' smoke for one or more hours/day?	___	___
Larynx (voice box)		
12. Have you had persistent hoarseness?	___	___
Mouth and Throat		
13. Have you had any of the following symptoms lasting more than a month?		
Pain or difficulty swallowing	___	___
Pain or tenderness in the mouth	___	___
A sore or white spot in your mouth	___	___
14. Do you drink more than 4 oz. of wine, 12 oz. of beer, or 1 ½ oz. of whiskey every day?	___	___
Stomach		
15. Have you vomited blood in the past month?	___	___
16. Have you had black stools in the past 6 months?	___	___
Does this happen only when you are taking pills with iron in them?	___	___
17. Have you had a stomach pain several times a week?	___	___
18. Has a physician told you that you had stomach growths called polyps or an ulcer?	___	___
Large Intestine and Rectum		
19. Have you had a change in your usual bowel habits?	___	___
20. Has your stool been becoming more narrow in diameter?	___	___
21. Does this happen with every bowel movement?	___	___
22. Have you had bleeding from the rectum, either with bowel movements or at other times?	___	___
23. Have you had mucus in your stool every time you had a bowel movement?	___	___
24. Have you been told that you had a polyp in the large intestine?	___	___
25. Have you had ulcerative colitis?	___	___
Breasts		
26. Do you self-examine your breasts?	___	___
27. Do you have a lump in either breast?	___	___
28. Have you had breast pain recently?	___	___
If yes, is this only at time of menstruation?	___	___
29. Has there been discharge or bleeding from your nipples, or have they begun to pull in (retract)?	___	___
30. Are there any changes in the skin of your breasts?	___	___
31. Have you ever had a breast biopsy?	___	___
Cervix, Uterus, and Vagina		
32. Do you have vaginal bleeding or spotting?	___	___
If yes:		
Is it between periods?	___	___
Is it after sexual intercourse?	___	___
Is it after menopause?	___	___
33. Have you stopped having your periods?	___	___
At what age? ______		
Since then, have you ever had hormone therapy?	___	___
Have you had a hysterectomy?	___	___
34. Have you ever had sexual intercourse?	___	___
Did you first have intercourse before age 16?	___	___
35. Did your mother use the hormone DES when she was pregnant with you?	___	___
Skin		
36. Has there been bleeding or a change in a mole on your body?	___	___
37. Do you have a mole on your body where it may be irritated by underwear, a belt, etc.?	___	___
38. Do you have a sore that does not heal?	___	___
39. Do you have a severe scar from a burn?	___	___
40. Do you have fair skin and sunburn easily?	___	___
41. Do you sunbathe for long hours or use a suntanning booth?	___	___
Thyroid		
42. Can you see or feel a lump in the lower front of your neck?	___	___
43. Did you have X-ray treatment to your face for acne, tonsil enlargement, or other reasons?	___	___
Kidney and Urinary Bladder		
44. Have you had blood in your urine?	___	___



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POINT 9: EXERCISE AND STRESS

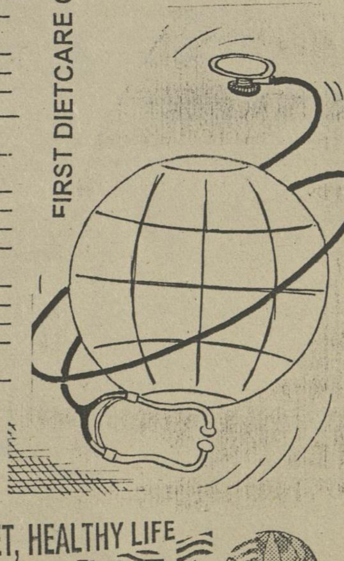
Everyone should start a program of exercise, but see a physician before doing so if you have risk factors of cardiovascular disease. Initially the exercising should start out slowly, then increase to a comfortable level. Fast walking is a good form of exercise and should be done as part of your program. Two miles would be a satisfactory distance to briskly walk four out of seven days. I stress fast walking because it is easier to do than other forms of exercise—no equipment to buy, no change of clothing, no one to rely on except yourself. You can walk in a shopping mall in inclement weather. Calisthenics should also be done to firm up abdominal-wall muscles and decrease that "spare tire." Five to ten sit-ups, with knees bent, can readily be done at home every day. Lower back pain is one of the most common pains in America. Simple stretching and flexing exercises will prevent and treat lower back pain.

Remember, the data show that some amount of exercise is better than none for those who do not do any. Just a little exercise every day will benefit you enormously. Choose an exercise program that you are likely to follow, and continue to stick with your exercise routine.

In addition to exercising, learn to control stress by whatever means you can. Self-hypnosis, meditation, biofeedback, or other methods are beneficial if they work for you. Some people use music or recreation to relax. Stress is a killer! So deal with it.

Continued........see next issue

FIRST DIETCARE CENTRE



Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com. Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

BALANCED DIET, HEALTHY LIFE
DIETCARE

Bulletin of
First DietCare Center

Vol. 3 No. 7 July 1999

The Simone Ten – Point Plan (Episode 3)

POINT 10: EXECUTIVE PHYSICAL

It is well known that persons with localized cancer are potentially curable and live longer than those with widespread cancer. Hence everyone age 35 and older should have an annual comprehensive executive-type history and physical examination with appropriate laboratory studies in order to prevent or detect early cancer or heart disease. What is certain is that if a physician looks for early cancer, he will probably find it if it is there.

A thorough history should include questions about all the risk factors for cancer that are listed in Chapter 2, as well as a review of the questions outlined in Point 8 of this modification plan. Also, questions should be asked concerning the risk factors of cardiovascular disease as well as other routine questions designed to pick up additional medical abnormalities.

The physical examination is important and should be complete, starting at the scalp and finishing at the toes. One capable, highly trained specialist should perform the entire examination, rather than your gynecologist doing the Pap smear and breast exam, your cardiologist checking the heart, your dentist looking in your mouth, and so on. The examining physician can then ask for consultation in certain circumstances.

Laboratory tests are the third major part of a person's workup. Little more than one ounce of blood and urine is taken and assayed for chemical tests. Table 22.2 lists the laboratory tests, the normal range values of the tests, and the functions tested.

Testing the stool for trace amounts of blood is another important laboratory examination. Trace amounts of blood in the stool could result from some lesion(s) in the gastrointestinal tract, which could be a gastrointestinal cancer. To detect the reason for the blood, the gastrointestine should then be appropriately worked up by doing a colonoscopy. It is important to completely avoid all red meat for three entire days prior to and during the collection of the stool specimens, because red meat contains animal blood, which will produce a positive result in the test. All other instructions must also be followed for this test.

Certain fiberoptic procedures should be done when indicated. By using a fiberoptic laryngoscope, we have found many lesions of the nasopharynx and larynx when examining patients who have been exposed to passive smoke for several hours a day, patients who have been hoarse for two weeks or more, or other high-risk patients.

Indications for doing a fiberoptic colonoscopy to examine the colon are:

1. To evaluate the colon when an abnormality was found with a barium enema.
2. To discover and excise polyps.
3. To evaluate unexplained bleeding:
   - A positive occult blood stool test (detection of blood in the stool that could not be seen by the eye).
   - Bleeding from the rectum
4. An unexplained iron deficiency anemia.
5. A survey for colon cancer:
   - A strong family history of colon cancer.
   - To check entire colon in a patient with a treatable cancer or polyp.
   - A follow-up after resection of polyp or cancer at 18- to 36-month intervals, depending on the clinical circumstances.
   - In a patient with ulcerative colitis.
6. Chronic inflammatory bowel disease.
7. To control bleeding.

An annual chest X ray should be done in high-risk patients. A person's lung function can be readily assessed by pulmonary function testing—a series of tests that determine the quantity and speed of the air moving in and out of the lungs, the volumes of the lungs, etc. Also, routine examination of the sputum (excretions brought up from the lungs) will detect certain lung cancers earlier.[2]

A resting electrocardiogram can also be done as part of a routine examination. If the resting ECG is abnormal or if the patient has cardiac symptoms, an exercise or stress electrocardiogram should be done by a competent specialist.

If a bruit (pronounced brew-ee) is heard in a person's neck and the person has no strokelike symptoms from this abnormality, special tests should be done to determine if the all-important carotid arteries are severely narrowed. A bruit is a sound in an artery usually produced by obstructions caused by plaques in the arteries.

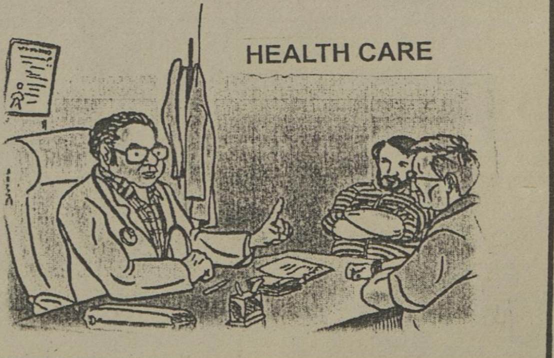
Self-examinations of the breasts should be performed once a month by all women. Because men can also get breast cancer, they should examine their breasts as well. Self-examinations of the testicles should also be performed by men, especially between the ages of 20 and 40.

If you are leery about the executive physical, review Table 22.3 on page 273, which shows which cancer(s) can be detected in each part of the executive examination. As you can see, it will be well worth the time.

FOOD FOR THOUGHT

A number of studies have shown that people who abuse their bodies, like smokers, alcohol users, those who eat poorly, those who don't exercise, and so forth, do not pay enough dollars to health-care or other insurance premiums to adequately offset the much higher number of health-care dollars or other insurance dollars they consume. As always, those who are health conscious and who take care of themselves have to subsidize those who do not.

I propose that this injustice stop! I propose that those who consume products that increase the risk of illness should pay a tax on those products right at the point of sale. Differential health insurance premiums can be established to reward those who follow healthy lifestyles by allowing them to pay lower premiums, and properly reflect the higher costs associated with caring for individuals who do not follow healthy lifestyles by imposing higher premiums. You can control the destiny of your health and should be able to control its cost!



Continued… Simone Plan

Table 22.2 Laboratory Tests for the Executive Physical

Function Tested	Laboratory Test	Normal Range
Bleeding from gut	Stool for occult blood	Negative
Blood count	Hemoglobin	Male: 13–16; Female: 12–15
	Hematocrit	Male 42–50; Female: 40–48
	White blood cells	5,000–10,000
	Platelet count	145,000–365,000
Blood lipids	Cholesterol	160–260
	HDL cholesterol	25–90
	Triglycerides	10–150
Blood proteins	Total protein	6.1–7.7
	Albumin	3.8–4.9
Blood sugar	Glucose	70–120
Electrical function of cells	Calcium	4.5–5.3
	Phosphate	3.0–4.5
	Magnesium	1.3–2.1
	Sodium	137–145
	Chloride	100–110
	Potassium	3.3–4.6
	CO_2	23–33
	Uric acid	3–7
Kidney function	Blood urea nitrogen	7–23
	Creatinine	.7–1.6
	Urinalysis	—
Liver function and enzymes	Alkaline phosphatase	30–85
	SGPT	3–44
	SGOT	8–31
	LDH	133–248
	Total bilirubin	.2–1.5

Table 22.3 Cancer Detected By Each Part of Executive Examination

Part of Executive Examination	Cancer Detected
Medical history	Most cancers with local or generalized symptoms
Executive physical examination	Skin, lymphoma, mouth, thyroid, breast, abdomen, uterus, vagina, rectum, penis, testicle
Chest X ray	Lung, pleura, central chest, bone
Colonoscopy	Colon, sigmoid, rectum
Complete blood count	Leukemias, multiple myeloma, cancers that produce abnormal red and white counts
Blood chemistries	Liver and associated cancer, kidney
Urinalysis	Kidney, bladder
Stool occult blood	Gastrointestine
Papanicolaou smear	Uterine cervix
Sputum cytology	Lung
Mammography	Breast
Sigmoidoscopy	Rectum and sigmoid colon
Direct laryngoscopy	Larynx
Toluidine blue mouth rinse	Mouth

The End

FATS

Dietary animal fat is found in all red meat, luncheon meats, and all dairy products, including milk, cheese, and eggs. Dietary animal fat promotes and probably initiates carcinogenesis.[25-45] Epidemiological studies have repeatedly shown an association between consumption of dietary fat and the occurrence of cancer at several sites, especially the breast, the prostate and colon/rectal area, the endometrium, and, to a lesser extent, the ovary. The high fat consumption is related not only to the high incidence of breast cancer but also to the high mortality rates from breast cancer.[46-51] Some studies show a correlation with saturated fats, but other studies show a correlation with both saturated and unsaturated fats.[52] Low breast cancer rates are seen in peoples who consume low-fat diets, such as the Japanese, Seventh-Day Adventists, and Mormons in the United States.

Early life exposures are the important determinants of breast cancer risk for dietary fat. The studies citing changing rates of colon cancer as well as breast cancer in some Japanese immigrants to the United States suggest that the older the Japanese immigrant to the United States, the less her risk of developing breast cancer and colon cancer. However, you must remember, older Japanese women would be less apt to adopt American dietary customs.

The issue of an inverse relationship between serum cholesterol and cancer of the colon was thought to be significant at one time. However, a thorough examination of all the data revealed that the information was inconclusive and did not point to a casual relationship between low cholesterol levels and the risk of colon cancer. In fact, the National Institutes of Health Consensus Conference stated that there was no relationship between low blood cholesterol and colon cancer.

The prognosis for patients with breast cancer differs from one country to another. A better survival rate is seen in Japanese patients than in United States patients.[53-55] The differences are thought to be related to fat consumption.[56-61] Neither the clinical extent of disease nor histology was the basis for the differences seen in survival. Disease-free survival was also greater for Japanese women than American women.[62] The medical care given to Japanese women and Caucasian women in Hawaii was the same, so the differences in survival could not be attributed to differences in treatment.[63]

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Several studies have indicated that increased body weight may decrease both disease-free survival and overall survival in breast cancer patients.[64-66] The lowest five-year disease-free survival in patients was noted in patients with high weights (more than 150 pounds) and high cholesterol (above median), and the highest five-year disease-free survival rate was noted in those with low weights (less than 150 pounds) and low cholesterol (below median).[67] Dietary fat and obesity clearly influences the patient's prognosis, but the mechanism by which it does is not well understood. Several theories have been put forth to explain the reactions that are triggered by increased body weight and dietary fat, including abnormalities in the pattern of prolactin secretion,[68] decreased levels of gonadotropins,[69] increased conversion of androstenedione to estrone,[70] or altered sex hormone binding globulin, free androgen, and free estrogen.[71]

Because of the preceding data, it might be worthwhile to put breast cancer patients on a low-fat, high-fiber diet to test the hypothesis. Another reason to increase dietary fiber in breast cancer patients is that it has been shown to increase the fecal excretion of estrogen and to decrease the plasma concentration of estrogen.[72] In fact, it might be wise to extend this modified diet to other diet-sensitive tumors—colon and rectal, prostate, and endometrial cancers, for example—in an attempt to increase disease-free survival as well as survival in general.

BALANCED DIET, HEALTHY LIFE

DIETCARE

Bulletin of
First DietCare Center

Vol. 3 No. 8 August 1999

Salads

A salad is usually a mixture of raw vegetables and fruits, but cooked and pickled foods (e.g. rice, pasta) can also be included.

Salads can be served as:

1 A starter to a meal.
2 An accompaniment to a main course of meat, poultry, fish, etc.
3 A complete main course, including meat, fish, poultry, cheese, egg, or pulses and nuts for protein.
4 A filling for sandwiches and rolls in packed meals.

Salads are nutritionally important because:

1 Vitamins and minerals which are easily lost in cooking are preserved.
2 Fibre (NSP) is provided by many raw fruits and vegetables, and also by pulses if used.
3 Salads provide bulk to the diet and are useful in energy-reduced diets, as most raw fruits and vegetables have low energy values.
4 Water is provided by raw fruits and vegetables.

Points to remember when preparing salads

1 Ingredients used should be crisp, fresh, well cleaned, and refreshing.
2 The ingredients should be prepared just before consumption to preserve their freshness, crispness, and nutritive value.
3 A variety of colours, flavours, and textures should be included to make the salad interesting to eat.
4 The ingredients should be attractively and neatly served with the minimum of handling.
5 The salad should be easy to serve and eat.

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Suitable salad ingredients: preparation

Raw vegetables	
Lettuce	Discard outer, damaged leaves. Wash well, dry. Shred or tear leaves or leave whole.
Watercress	Discard damaged leaves and thick stalks. Wash well and inspect thoroughly for insects.
Mustard and cress	Wash while still in punnet. Cut in bunches, using the stalks.
Cucumber	Wash the skin if it is to be left on. Slice thinly.
Spring onion	Remove roots and outer skin. Wash well. Cut tops off.
Tomato	Choose firm tomatoes. Wash well. Slice or segment the tomato.
Radish	Remove stalks and roots and wash well.
Celery	Trim off leaves and root ends. Scrub each stalk well and slice.
Pepper (capsicum)	Wash well. Cut in half lengthways, and remove core, seeds, and pith. Slice or dice.
Chicory	Discard damaged leaves. Wash, halve lengthways or slice.
Carrot	Use young carrots. Wash well, serve whole if small or grate.
Cabbage	Use firm white cabbage. Shred finely and wash well.
Cauliflower	Use the head, broken into very small florets.
Mushrooms	Wash, peel if necessary, and slice thinly.
Cooked vegetables	
Beetroot	Wash well, boil until soft with skin on, cool. Remove skin, slice or dice, and serve in vinegar or on its own.
Potato	Diced in potato salad or hot, new potatoes with mint and butter.
Carrots	Diced in potato salad.
Beans	
Red kidney beans	Soak dried beans overnight in cold water, then boil for at least 20 minutes until soft.

Cont.... Salads

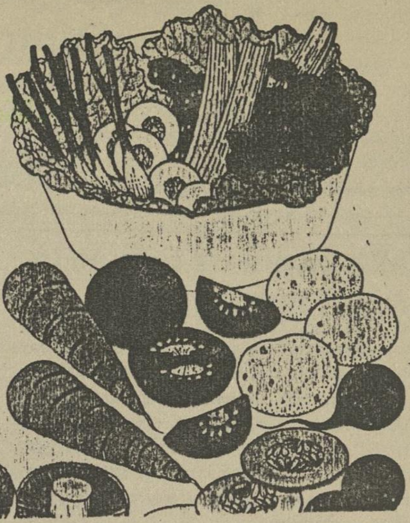
Haricot beans	As above.
Butter beans	As above.
Broad beans	Wash and boil gently for 15 minutes until soft.
French beans Runner beans	Boil until soft and serve with a dressing.

Herbs

Fresh herbs can be sprinkled over salads or mixed into dressings to give extra flavour and interest.

Fresh fruits

Apple	Leave skin on. Slice and core, sprinkle with lemon juice to prevent browning.
Banana	Sprinkle with lemon juice.
Grapes	De-seed.
Citrus fruits	Remove segments, discarding pips and pith.
Pineapple	Remove hard core.



Nuts

Almonds
Walnuts
Peanuts
Cashew nuts
Hazel nuts
Brazil nuts
Use blanched, flaked or toasted almonds.

Pickles

Olives
Walnuts
Gherkins
Capers
Onions
Chutneys

Garnishes for salads

Sieved hard-boiled egg yolk
Grated cheese
Nuts
Chopped, fresh herbs

Salad dressings

Salad dressings can be served separately, or combined with the salad ingredients.

They are added to salads to:

1 Provide extra flavour.
2 Moisten the salad.
3 Aid chewing and swallowing the salad vegetables.
4 Prevent browning of fruit or vegetables.
5 Prevent loss of vitamin C by oxidation.

If the dressing is to be combined with the salad ingredients, it should be added just before serving, as soaking the ingredients will soften the leaves of salad vegetables and the vinegar acid will cause staining.

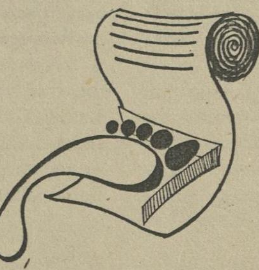
FIRST DIETCARE CENTRE

DIETARY FIBER

During the past several decades the consumption of dietary fiber has decreased in many industrialized countries, and concomitantly the consumption of dietary fat has increased. Dietary fiber includes indigestible carbohydrates and carbohydratelike components of food such as cellulose, lignin, hemicellulose, pentosan, gum, and pectin. They provide bulk in the diet, and the major categories of foods that provide dietary fiber include vegetables, fruits, and whole-grain cereals.

Fiber is important for protection against cancer. Americans typically consume three to five grams of fiber per day compared to the twenty-five to thirty grams consumed by rural Africans every day. High dietary fiber protects against colon/rectal cancer, breast cancer, heart disease, diverticular disease, obesity, and diabetes.[75-79] A low incidence of cancer is seen in people who consume large amounts of carotene-rich foods and cruciferous vegetables like cabbage, broccoli, cauliflower, and Brussels sprouts.[80-86]

Fiber's protective action is probably due to its binding of bile acids, cholesterol, lipids, poisons, and carcinogens. It also increases the weight and amount of stool, which, in effect, dilutes carcinogens. And it decreases the gastrointestinal transit time so that the carcinogens are excreted more quickly.[87-92] And finally, it keeps the intestinal flora healthy so that they do not die and excrete fecapentaenes.



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Bulletin of
First DietCare Center

Health disorders related to unwise food choice

EPISODE-1

It is unfortunate and disturbing that many people in affluent societies (such as the UK), who have enough to eat, suffer from health disorders that are the result of over-indulgence in food, or unwise choices of diet. An unbalanced diet, e.g. one containing too much fat or sugar, can result in a variety of nutritional disorders, including:

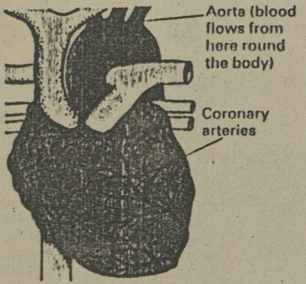
heart disease
obesity
tooth decay and gum disease
intestinal diseases

Heart disease

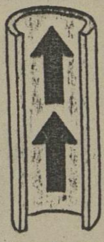
Heart disease is a major cause of death in the UK, the USA, and other Western countries. In England and Wales approximately 27% of all deaths are due to coronary heart disease (CHD). About 180,000 people die each year and a further 115,000 are treated in hospital because of CHD. Treatment costs around £500 million a year. CHD is the most common type of heart disease and can eventually lead to **heart attacks.**

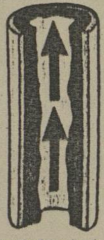
What happens in heart disease

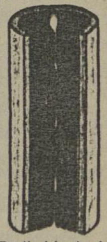
To work normally, the heart muscle needs a supply of oxygen from blood in the coronary arteries so that it can pump blood through vessels to all parts of the body.



If one or more of the coronary arteries become blocked with fatty deposits (called atheromas), the blood carrying oxygen cannot reach the heart so easily.


Normal artery: blood can flow through normally.


Partly blocked artery: blood flow is restricted.


Badly blocked artery: blood cannot flow through.

As a result, the heart muscle becomes partially starved of oxygen. This causes a temporary, severe, cramp-like pain across the chest, down the left arm, and around the neck. This is called **angina**. The pain is usually brought on by exercise, when the heart has to work harder, and it usually passes with rest and medication.

If there is a sudden and complete blockage in the arteries, caused by a blood clot (**thrombus**) in the artery, no blood will get through, and the person will suffer a heart attack. Doctors call a heart attack a **coronary thrombosis** (because of the blood clot) or a **myocardial infarction** (which means death of the heart muscle).

The patient will suffer severe pain lasting for several hours, and will feel sick and faint. In a heart attack, the heart muscle is badly damaged because it does not have enough oxygen, and afterwards it is weaker. Prompt treatment can limit the damage. If the heart stops beating during the attack, (a **cardiac arrest**), the patient will die unless emergency first aid is at hand.

Causes of heart disease

Heart disease is a major concern, and there has been much research into its causes and ways of preventing it.

It has become clear that there is no single cause of heart disease, but many **risk factors**. Usually CHD is brought on by more than one of these. Some of the risk factors can be prevented or reduced by changing habits or lifestyle, but some can not.

e last page…

55

Risk factors that cannot be prevented:

1 **Being male** – more men than women have CHD, though it affects an increasing number of women.
2 **Increasing age.**
3 **Heredity** – heart disease often runs in families.

Risk factors that can be prevented or reduced:

1 **Smoking cigarettes** – increases the risk of CHD for both females and males.
2 **Choice of food** – eating less fat and more fruit and vegetables can help prevent CHD.
3 **Being overweight.**
4 **Lack of exercise** – regular exercise strengthens the heart muscle and makes it work more efficiently.
5 **Stress** – people who are impatient, ambitious, competitive, tense, and anxious seem more likely to suffer from CHD than those who are calmer, less worried, and more relaxed.
6 **High blood pressure** – makes the heart work harder and speeds up the blocking of arteries. The other risk factors listed above may cause high blood pressure.

All these risk factors are important, but in this book we will only look at choice of food.

Choice of food and heart disease

Research has shown that our diet, especially the amount and type of fat we eat, can increase the risk of CHD. Diets that are high in saturated fatty acids (see p. 6), may raise the level of **cholesterol** in the blood. High blood cholesterol levels are linked to the development of CHD.

Cholesterol is found in some foods, and is also made in the body by the liver, mainly from saturated fatty acids in food. If cholesterol is **oxidized** (picks up oxygen circulating in the blood), it can be deposited in the linings of the coronary arteries, which start to become blocked.

Antioxidants found naturally in foods, especially vitamin E, vitamin C, ß-carotene, and selenium (see pp. 15, 19, 12, and 21), help to stop cholesterol picking up oxygen, so that it is deposited less readily in the coronary arteries.

(Artificial antioxidants, which are added to foods to preserve them (see p. 169), do not help the body in this way.)

Cholesterol is not made so readily by the liver if a person eats foods that contain polyunsaturated fatty acids (PUFAs), and some monounsaturated fatty acids (see p. 6). For example, the PUFAs in oily fish (e.g. herring, sardine, mackerel, and pilchards), seem to reduce the amount of cholesterol made by the liver.

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Research has shown that when oils are processed to make them into margarine and other cooking fats, the PUFAs in the oil may change to **trans fatty acids**. These may increase the amount of cholesterol made by the liver. Some margarine manufacturers have tried to reduce the amount of trans fatty acids formed during processing, so that they can promote the healthy image and benefits of using their products.

Prevention of heart disease should begin in early childhood. Research has shown that fatty streaks have appeared in the arteries of some children as young as 10 years old. To prevent later problems, parents should encourage their children to:

1 Eat a variety of foods.
2 Eat fresh fruit, vegetables, and salads.
3 Take exercise and be active, as this strengthens the heart and will be a good habit to continue in adult life.
4 Eat less high-fat food.
5 Eat less sweet food, as excess sugar is converted into fat in the body causing weight gain and therefore a strain on the heart.
6 Eat less salty food, as too much salt can lead to high blood pressure and therefore a strain on the heart.

Adults should also follow this advice. It can be hard to alter your eating habits and way of life, but it is worth the effort. CHD patients are usually given dietary advice and are encouraged to stop smoking and limit the amount of alcohol they drink.

Obesity

Obesity (excessive weight gain) is a very common and increasing nutritional disorder in affluent countries. It can be caused by hormonal disorders, but the major cause is eating more food than the body needs. The excess is stored as fat in the body.

Years ago, it was considered desirable to be overweight, because it indicated that a person was wealthy and could afford to live richly. This idea has now changed, and obesity is known to be undesirable and unhealthy because:

1 Obese people are more prone to heart disease, chest infections, varicose veins, hernias, high blood pressure, diabetes, gall stones, osteoarthritis of the back, knees, and hips, and skin infections.
2 Extra body fat can cause complications during operations.
3 Unhappiness about being obese, and comments made by other people, may make an obese person turn to food for comfort, making their condition worse.

Continued........see next issue

Bulletin of
First DietCare Center

Health Disorders (Episode 2)

Losing weight

Many people feel that they need to lose weight and take action to do so. A great deal of money is spent on slimming aids and products, by people trying to lose weight quickly and with the minimum effort.

Some people who try to lose weight are not obese or even overweight. Girls and women in particular may feel under pressure to conform to the sort of 'ideal' body image they see in magazines and on television. However, they will find it difficult and unhealthy to maintain a body weight that is too low for them.

A person who is trying to lose weight should seek advice from a doctor or dietician, to agree a weight-reducing diet that suits them. Weight loss takes time and requires changes to a person's eating habits and way of life (e.g. taking more exercise). Will-power, determination, and an understanding of how food affects the body are needed.

The most effective and healthy way to reduce weight is to take in slightly less energy from food than the body needs each day. The body then makes up the difference by releasing the energy it has stored in fat. Gradually the stores of fat are reduced.

Depending on the weight, height, and age of the person, a diet providing 4200–6700 kJ (1000–1500 kcal) per day is usually recommended. The weight-reducing diet should include a good variety of foods to make it interesting, with plenty of fresh fruit, vegetables, and wholegrain cereals, and very little fatty or sugary food. High-protein foods and alcohol should also be limited.

Exercising uses more energy, which promotes weight loss, tones the muscles, and generally helps to make a person feel better.

Very low calorie diets are heavily advertised as a quick and easy way to lose weight. They usually consist of a flavoured drink, containing a variety of nutrients, to replace breakfast and the midday meal. A well-balanced, 'proper' meal is then eaten at the end of the day. This type of diet can cause problems because:

1. It does not encourage the dieter to change their eating habits at every meal or in the long term.
2. It often leads to loss of muscle instead of fat.
3. Once normal eating resumes, weight may be put back on quickly.
4. It can be expensive.

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Many communities have weight-loss groups where people who want to lose weight can meet regularly, receive dietary advice and information, have their weight measured and monitored, and encourage each other to succeed in reaching their target weight.

These groups are often successful, and help many people who find it difficult to lose weight alone. Once the target weight is reached, people should stay in contact to try and maintain their new, healthier eating habits.

Eating disorders

Eating disorders have been widely reported and researched since the beginning of the 1980s. Most publicity has been given to **anorexia nervosa** and **bulimia nervosa**. These disorders have quite a lot in common, and a person may show symptoms of both.

Anorexia nervosa

This disorder affects mainly teenage girls and young women, and sometimes boys and young men. Many patients who receive treatment return to their normal weight after two to ten years, but may still have difficulty in eating normally. Some patients with anorexia eventually starve themselves to death.

A person with anorexia nervosa:

1. Refuses to eat enough to maintain their body weight for their age and height.
2. Believes and sees their body to be much bigger than it really is.
3. Has a real and great fear of becoming fat.
4. Develops dry skin, and brittle, dry hair on their cheeks, back of the neck, arms, and legs.
5. In females, menstruation (periods) stop, and may not return for years. This can lead to osteoporosis (see p. 22) and infertility (being unable to have children).
6. Has cold feet and hands, and possibly serious heart problems.
7. Has constipation.

Patients with anorexia nervosa control their body weight in one of two ways:

1. Eating very little, often no more than 200–300 kcals (840–1260 kJ) per day.
2. Eating food in varying amounts and then getting it out of their body, either by making themselves vomit (being sick) or by taking laxatives. The food leaves the body before it has been digested properly, and so does not give the body energy or nutrients.

Patients are often very fussy about food, but talk a lot about it and like to cook for other people. They often exercise vigorously so that they 'burn off' any energy they have taken from food.

57

Bulimia nervosa

Patients' with bulimia nervosa have powerful urges to eat very large amounts of food, and then often make themselves sick or take laxatives to prevent gaining weight. Eating large amounts of food like this is called binge eating. It may happen several times a week and be alternated with periods of eating almost nothing.

Like anorexic patients, bulimic patients are often afraid of becoming fat and have a distorted image of what shape and size they are.

Bulimic patients often eat in private, hiding their problem away from other people. They may suffer:

1. Kidney problems and swelling of the tissue under the skin (oedema).
2. Muscle weakness, constipation, and headaches through losing potassium and chloride (see p. 24) when they vomit.
3. Sore throat, swollen salivary glands, and tiredness.
4. Severe dental problems caused by acid from the stomach coming in contact with the teeth when they vomit. The acid dissolves the tooth enamel (see p. 49).

Causes of eating disorders

There is no single cause of eating disorders. Many factors may lead to a person having an eating disorder, including:

1. Emotional shock or grief.
2. Stress over a period of time.
3. Fear of growing up.
4. An unhappy childhood.
5. Unhappiness about body size and shape.
6. Unhappy relationships within the family.
7. A need to have control over one's life.

People react very differently to these, so this list is only a guide.

Treatment

Treatment for eating disorders is usually long, and it is often not possible to say whether a patient has been cured.

Patients often return to normal weight and eat regularly, but tend to slip back into old habits of controlling what they eat if they come under pressure or are unhappy again. Special clinics dealing only with eating disorders have expert help at hand. Patients must want to be helped and co-operate with the treatment if it is to work.

Occasionally a patient is so weak that they are put into hospital against their will in order to try to save them. They have to stay in bed and are given food regularly in the hope that they will gradually put on weight.

Treatment often includes the whole family, to give them an understanding of the problem. Much patience and understanding is needed if the treatment is to have any chance of success.

EPIDEMIOLOGICAL PATTERNS

Large epidemiological studies demonstrate that a high-risk diet for cancer as well as cardiovascular diseases is one that has high-fat, high-cholesterol, low-fiber, salt-cured, pickled, charred, smoked, or burned foods, and a low consumption of vitamins and minerals. About forty years ago Dr. A. Tannenbaum showed that dietary fat significantly favored the development and growth of both spontaneous and induced breast cancer in animals.[7] Since then a high-fat, low-fiber diet has been associated with human breast cancer, colon cancer, prostate cancer, cancer of the endometrium, and coronary artery disease, suggesting that similar modifications of the diet would be beneficial in decreasing the risk of developing all these major diseases. Over the past half century, Americans have been consuming more fat, more cholesterol, more animal protein, more refined sugar, and less fiber. Likewise, an ever-increasing incidence of cancer has been seen for the same period in the United States.

Epidemiological studies are very important to assess cancer trends. The Bantu people of rural Africa have an extremely low incidence of cancer compared to industrialized nations. They have a low-fat, very high fiber diet. Except for Japan and Finland, the more industrialized a country is, the higher is the rate of "diet-sensitive" tumors, that is, colon/rectal cancer, breast cancer, endometrial cancer, and prostate cancer. People in industrialized countries usually eat a diet higher in fat than do people in nonindustrialized countries. The people in western Europe and in English-speaking countries have the highest colon cancer incidence rates, while the peoples of Asia, Africa, and South America (except Uruguay and Argentina, where the rates are similar to those of North America) have the lowest colon cancer incidence rates.

If a person emigrates from a country with a low incidence rate of colon cancer to a country with a high rate, such as the United States, the higher colon cancer rate shows up within the first generation. Japanese immigrants to the United States have the same colon cancer rate after only twenty years of consuming the American diet and have the same incidence of breast cancer after only two generations. Only 20 percent of the daily caloric intake in Japan is derived from fat compared to 40 percent in America.

About half of the Seventh-Day Adventists in the United States follow a vegetarian diet, and most do not eat pork. Their breast cancer mortality is one-half to two-thirds the breast cancer mortality seen in the United States population in general.

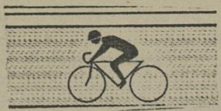
American-born Jews of European descent are at high risk for developing colon and rectal cancer. A twenty-year prospective study conducted in Israel has recently shown that a diet high in fiber, with foods of high vitamin C content, and with polyunsaturated fats, substantially reduces the number of colon and rectal cancer cases in that group.8 And Seventh-Day Adventists and Mormons have a substantially lower incidence of colon cancer than the general population in the United States as well.9-11 Both of these groups consume dietary fiber in great amounts and little or no beef or animal fat.

People in Finland have a high fat intake, with the majority of their fat calories derived from dairy products rather than beef. The incidence of heart attacks is quite high in that country; however, the incidence of colon cancer is very low. The latter statistic may seem surprising, but it is probably due, in part, to the large amount of fiber the Finnish get from rye. Hard evidence to explain this seeming discrepancy was unavailable until the recent discovery of fecapentaene. Fecapentaenes are found in the stools of people on fiber-depleted diets who have a high incidence of colon cancer. This chemical, produced by bacteria in the large bowel and then released by them when they die, is not present in fiber-eating populations who are free from colon cancer.[12,13] Fecapentaene is a very potent mutagen, as potent as one of the most potent carcinogens that we know, benzopyrene. When fiber is added to the diet, the bacteria stay healthy: they don't die and they don't release the fecapentaene.

Continued........see next issue

First DietCare Center

Vol. 3 No. 11 November 1999

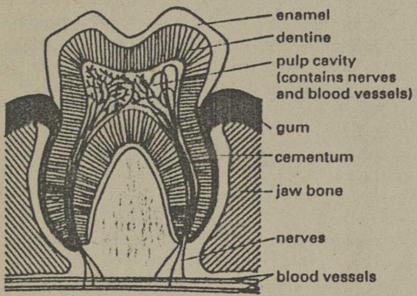


Health Disorders (Episode 3)

Tooth decay and gum disease

Tooth decay and gum disease affect many people worldwide, especially in countries where people often eat foods containing added sugar.

Dental caries is the name given to tooth decay. **Periodontal disease** is the name given to gum disease.



The diagram shows the structure of a tooth. The enamel covering the tooth is 96% minerals (mainly calcium, and phosphorus). Teeth form in the jaws long before they erupt (come through the gum), and must be looked after if they are to last, and chew food efficiently.

When food is eaten, a white, sticky substance called **plaque** builds up on the surface of the teeth, especially next to the gum. Plaque is mostly micro-organisms, plus some water and polysaccharides (see p. 10). When sugar is eaten, it is absorbed into the plaque, broken down by the micro-organisms, and turned into acid.

pH is a measure of acidity. Plaque normally has a pH of 6.8, but when sugar is eaten it can fall as low as pH 4.5 within seconds. Below pH 5.5, the mineral part of tooth enamel dissolves. It cannot be replaced, and leaves a weak spot, which gets larger and deeper until a cavity (hole) is made in the tooth (this is sometimes called 'acid attack'). If unchecked, the decay will continue until the whole tooth is affected and has to be removed.

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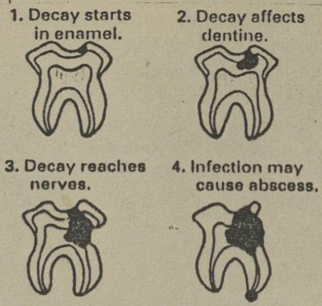
1. Decay starts in enamel.
2. Decay affects dentine.
3. Decay reaches nerves.
4. Infection may cause abscess.

Eating a lot of sugary foods makes teeth more likely to decay. This is because the plaque pH stays low, as acid forms every time sugar is in the mouth. This is why it is sensible to avoid eating sweet foods between meals (see grazing, p. 53).

Plaque can be stained using special disclosing tablets (available from the chemist or dentist). This helps when cleaning the teeth, because you can see whether they are really clean after brushing.

Dental plaque also causes periodontal disease. This is where the gums become irritated and infected by micro-organisms in the plaque. The infection is called **gingivitis**. The gums swell, become inflamed and sore, and bleed easily. Eventually, the ligaments and bone that hold the teeth in place are destroyed and the teeth become loose and fall out. Bad breath (**halitosis**) is another symptom of periodontal disease. Teeth and gums can be kept healthy and look attractive by following these guidelines:

1. **Babies** – do not add sugar to bottle feeds or solid foods. Babies do not need it and will not notice that the food is not sweetened. Do not introduce babies to sweetened fruit juices and squashes too young. Encourage them to drink water between milk feeds. Do not give a sweetened dummy to suck as this can cause tooth decay even when the teeth have not erupted (come through).
2. **Children and teenagers** – limit their consumption of sweet drinks and sweet foods between meals. Have a special day of the week for eating sweets, preferably at the end of a meal, not between meals.
3. Study food labels. Many foods have sugar added, but give the chemical name, e.g. maltose, glucose, sucrose, fructose (see pp. 9–10). These too can cause tooth decay.
4. Look for low-sugar biscuits, soft drinks, and medicines. They often have artificial sweetners added and will say so on the label.

Fast food

'Fast food' has become increasingly popular in many countries, including the UK, and fast food outlets have grown rapidly in number and type. In 1989 UK consumers spent about £4 billion on fast food. The most popular types include:

sandwiches
burgers
fish and chips
pizzas
Chinese food
chicken and chips
Indian food

There is concern about the nutritional value of fast foods, particularly as many of the products have a high saturated fat and sugar content. Fast food companies are not required by law to declare the ingredients used in their products, so consumers cannot always be sure of what they are eating. For example, beef fat is commonly used for frying, but may not be declared. The fast food industry is also criticized over:

1 Loss of rain forest to grazing land for beef cattle for the burger companies.
2 The use of polystyrene containers which pollute the environment.
3 Litter pollution at take-away outlets.
4 The effect of fast food on the long-term health of young people.

FIRST DIETCARE CENTRE

Cleaning the kitchen

As the main function of the kitchen is food preparation, it is important that it is kept clean and hygienic. Most of the modern materials used in a kitchen are easy to clean and there are many products available to make cleaning easy. It is a good idea to get into a routine, so that there is never a build-up of dirt which would be difficult to remove.

Every day

1 Wipe over work surfaces and cooker hob after use.
2 Sweep up any dry crumbs, dust, etc., from the floor.
3 Wipe up any spillages.
4 Wipe down the sink and draining-board.
5 Empty the waste bin and rinse it out.

Every week

1 Sweep and wash floor.
2 Wipe top and fronts of units.
3 Wash all surfaces.
4 Clean oven if required.

Every few weeks

1 Wipe out and tidy cupboards and drawers.
2 Move oven and other large equipment and clean behind them.
3 Defrost the fridge (see pp. 253-4).
4 Wash walls thoroughly.

Continued.......Health Disorders

5 Put less sugar into home-made foods. Many cakes, biscuits, and puddings can be made successfully with less sugar.
6 Avoid acidic drinks, especially concentrated fruit juices and carbonated (fizzy) sweet drinks, which can damage tooth enamel.
7 Brush the teeth at least twice a day using a brush which is the right size, and in good condition. Pay particular attention to the biting surfaces of the teeth, and the point where the teeth meet the gums. Do not brush too hard as this can damage the enamel.
8 Learn how to use dental floss to clean between teeth and round the back teeth.
9 When the second (permanent) teeth erupt, the molars can be **fissure sealed** by the dentist. This is a painless process where the fissures (tiny nooks and crannies) on the top surface of the molar teeth are filled with a white plastic which sets and prevents particles of food becoming trapped there, and reduces the risk of decay.

FIRST DIETCARE CENTRE

10 Use a fluoride toothpaste to strengthen the enamel of growing teeth (see p. 24). Toothpastes, mouthwashes, tablets, and drops containing fluoride can all be obtained from the chemist or dentist. Tablets and drops should only be given under the instructions of the dentist, as too much fluoride can damage tooth enamel.
11 Have regular dental check-ups, at least twice a year.

THE END

STORE IN A COOL PLACE

Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com. Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

Bulletin of
First DietCare Center

Eat Less – Live Long

One possibility of giving the body an opportunity to survive longer lies in eating less. Numerous investigations have confirmed time and again what everyone could see in Germany during and after the War, a severely limited diet, particularly less meat and fat, does actually lead to a healthier and longer life. The fact that the statistical life expectancy has increased continually over the last decades is not a result of our behavior, but rather, thanks to medical advances, and particularly to a decrease in the infant death rate.

Anyone who inquires closely into the influence of food on life expectancy is most likely to realize the truth of the situation. Thus. Dr. Roy Walford, an immunologist at UCLA in Los Angeles, California, has succeeded in increasing the normal life-span of laboratory mice two or threefold by selecting the best. so-called 'major histocompatibility complex' for their genetic makeup. Since Dr. Walford has seen what tremendous damage a rich diet can cause to the immune system in his own studies, he does not rely on genetics to increase his own life-span, but instead has reduced his caloric intake by almost half. Again, in the laboratories of the National Toxicology Laboratory in Little Rock. Arkansas, there are thousands of rats and mice that live twice as long as normal because their diets have been reduced by 40%. Reportedly, the director of this laboratory and his assistants have also adjusted their menus in response to this example.

Naturally, we do not only eat too much, we also eat incorrectly, too quickly, too hot, too cold. We make all the mistakes that we have already talked about in the chapter on digestion. We perform too little exercise and we damage our health with smoking and other poisons, we expose ourselves to man-made pollutants (Figure 43).

If instead we were to live as reason and not pleasure tells us, we should, we would, come close to the ideal of living a healthy life to an advanced age. It has been estimated that a considerable adjustment in our way of life and a reduction of atmospheric and other pollution would reduce the number of chronic respiratory diseases by two thirds to three quarters.

Our unnatural way of life and man-made pollution cause disturbances to the human body, for example the large-scale production of so-called 'free radicals'. These are chaotically reacting molecules present in our bodies which contribute to many diseases from cancer to heart attacks and which are thought to be responsible for many premature aging processes.

Free radicals can also cause genetic damage when they react with our DNA. We won't get into that. The damage to proteins makes the point. Free radicals oxidize our cells so that they practically rust and normal metabolism is impossible for them. If the destructive rage of the free radicals is not stopped, they can weaken the whole body until illness and premature death results. There are researchers of old age (gerontologists) who believe that free radicals are the most important cause of the pathological aging processes.

Free radicals also play a discreditable role in the formation of cross linkages. Cross linkages are special bonds connecting amino acid chains. The cross linkages we are talking about are the undesired ones between protein chains which can occur in connective tissues and indeed in other tissues. The most evident damage this causes is to reduce the elasticity of the connective tissue. This is most easily tested by raising the skin on the back of the hand between two fingers and then releasing it.

If the fold of skin immediately becomes flat again, it has not yet been damaged and aged by cross linking (Figure 43). Crows feet of the eyes and wrinkles on the forehead are visible signs of connective tissue cross linking.

The connective tissue is made up of giant protein chains, some of which are arranged in spirals and some parallel to each other. which provide the tensile, extensive. flexile and compressive strengths of the connective tissue. Just like the springs and wires of a mattress or trampoline, they provide both elasticity and strength.

The ability of the protein chains to move depends on their being connected together without restricting one another. Think of the strings of a harp, they are firmly anchored and can nevertheless each vibrate elastically and return to the original tension when the vibration has stopped. However. if two adjacent harp strings were to be connected together they would no longer be able to vibrate so freely and would lose their elasticity.

The more errors our body makes as we age, the more cross linkages are produced. The less able the body is to cleave these cross linkages on account of lacking enzyme activity, the stiffer and more rigid. and lacking in functionality will be our connective tissue. Most important is to realize that tendons. muscles. nerve fibers, blood vessels and virtually most tissues are also damaged similarly (Figure 43).

To a certain extent, we can protect ourselves from the damage caused by free radicals by avoiding every influence that promotes their formation. The list is long and includes some things which most people like doing very much and do not care to do without. These people are therefore willing to accept the possibility of premature aging and perhaps premature death.

The influences that promote the formation of free radicals and cross linkages include prolonged and unprotected exposure to sunlight. certain types of UV radiation and radioactive radiation, nicotine. saturated fats and fats which have been overheated or exposed to the heat of a grill, industrial and other exhaust gases, and numerous other toxins and pollutants that we inhale, drink or eat and which are administered to us (Figure 44).

It is better to eat raw, non-toxic vegetables and fruits, a few carrots, some sweet peppers, apples. etc. every day. Fats should be consumed in the form of unsaturated vegetable oils or fish oils.

The disastrous effects of free radicals can also be limited by means of what are known as radical binders. as with 'rust preventives'. These are such antioxidants as vitamins E and C, the trace element selenium which is active at the lowest dose levels, or such enzymatic radical binders as superoxide dismutase (SOD) and other hydrolytic enzymes. SOD, unfortunately, is inactivated in the gut and oral administration therefore appears to be ineffective.

First Dietcare Centre
Under the Guidance of American Dietetic Association (ADA), USA

Cooking Practices

Practices that lead to a loss of nutrients

Heating

1 Destroys some vitamin C, thiamin, and riboflavin.
2 With an alkali (as in the addition of bicarbonate of soda to green vegetables to preserve their colour), heating leads to the destruction of vitamin C and riboflavin.
3 Overheating protein leads to hardening and reduced digestibility.
4 Keeping food hot further destroys vitamin C, thiamin, and riboflavin.

Soaking

Leads to loss of vitamin C, thiamin, riboflavin, and nicotinic acid into the liquid.

Exposure to air

1 Leads to the oxidation of vitamin C in vegetables, fruit, and fruit juices.
2 Leads to the gradual deterioration of fat, and rancidity (see p. 92).

Exposure to light

Leads to the destruction of riboflavin and vitamin A.

Practices that conserve nutrients

Steaming

Water-soluble vitamins are retained more effectively as food does not come into direct contact with water.

Stews and gravy

Preparation of gravy from vegetable cooking water retains some water-soluble vitamins. Water-soluble vitamins are retained in liquid used in a stew.

Pressure cooking

Less destruction by heat as cooking time is reduced.

Vegetable preparation

1 Preparation just before cooking prevents the oxidation of vitamin C.
2 If vegetables are prepared some time before they are to be cooked, they can be stored in an air-tight plastic bag to prevent the oxidation of vitamin C.
3 Placing green vegetables into boiling water, for cooking without pre-soaking, reduces the loss of water-soluble vitamins by leaching.
4 Minimum cooking time reduces heat destruction of vitamin C, thiamin, and riboflavin.

Practices that enhance nutritional value

Combining foods

1 The combination of low biological value protein foods (e.g. bread with lentil soup, baked beans on toast) means that indispensable amino-acids lacking in one food, can be provided by the other.
2 The combination of vitamin C with foods containing iron enhances the absorption of iron from the small intestine.

Preparing food

1 The preparation of curry spices in iron pots leads to iron passing into the spices.
2 Grating cheese enables the fat to be more easily digested.
3 Homogenizing milk (see p. 101) reduces the size of the fat droplets, which enables them to be digested more easily.

FIRST DIETCARE CENTRE

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Continued….Eat Less, Live Long

According to the European scientists. the breakdown and inhibition of the formation of cross-linked protein chains is also carried out by the proteolytic enzymes present in the most frequently used enzyme mixtures. They postulate that when taken over long periods, they contribute in old age to the maintenance of elasticity of the tissue and hence to its improved function. They further remark that, "it is naturally impossible to slow down every form of aging. The provision of enzymes does not absolve us from the obligation to do everything to avoid as many metabolic errors as possible in order to prevent premature aging."

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BALANCED DIET, HEALTHY LIFE

DIETCARE

Bulletin of
First DietCare Center

Vol. 4 No. 1 January 2000 Page 1

EFFECT OF FEEDING ALMONDS AND WALNUTS ON SERUM CHOLESTEROL AND BLOOD PRESSURE IN MAN

ABSTRACT: *Feeding almond and walnut oils has been a topic with the reputation that these nuts reduced serum cholesterol and blood pressure. Fourteen hypercholesterolemic and hypertensive persons and two normal persons were included in the study. They were fed 40 gms of almonds to one group of 7 persons and 40 gms of walnut to the other group in 200 ml sugarless milk shake with light breakfast. Calculated calories with restricted unsaturated fat and no extra saturated fat or cholesterol diet was allowed. In almonds fed group the average serum cholesterol significantly ($P<0.05$) decreased from 300 mg/dl on day one to 226 mg/dl after 12 weeks. Similarly the low density lipoprotein (LDL) cholesterol significantly ($P<0.05$) decreased from 108 mg/dl to 83 mg/dl, the blood pressure also decreased with some discrepancy. However, the body weight was not influenced. In walnut group similar results were observed where serum cholesterol significantly decreased ($P<0.05$) from 290 mg/dl to 242 mg/dl. The LDL cholesterol significantly decreased ($P<0.05$) from 105 mg/dl to 86 mg/dl after 12 weeks and the blood pressure both systolic and diastolic visually decreased. However, the body weight was not influenced. The nut feeding did not show any effect on persons with normal lipid profile.*

INTRODUCTION

In recent developments in cholesterol related research, the nuts particularly almonds and walnuts have gained much importance as correctors of blood lipid profile due to their own lipid composition. The Koehler et al. (1971) have also associated these nuts with a reduced risk of ischemic heart diseases. To explore the effect of almond and walnut oils on serum cholesterol, LDL, body weight and blood pressure, the study was undertaken on hypercholesterolemic and hypertensive human subjects. The USDA report (1988a) introduced the concept of elevating unsaturated fatty acids in diet and developed methodology for analyzing dietary consumption patterns. In the same year the Surgeon General, USA, recommended to reduce total fat intake and cholesterol intake upto 300 mg/day. Smith et al. (1995) were successful in modifying the meat fat composition by feeding unsaturated oils to animals but this was an indirect attempt of reducing human ischemic heart diseases. Sabate et al. (1993) reported that addition to walnuts into cholesterol lowering diet reduced the serum cholesterol level and favourable modified the reported that feeding almond oil resulted in rapid and sustained reduction in low density lipoprotein (LDL), total cholesterol, however, the high density lipoprotein (HDL) were not changed and the plasma cholesterol was significantly ($P<0.01$) reduced. The present study was undertaken to find out a way to reduce human serum cholesterol without medication or having a drastically reduced dietary programme in hypercholesterolemic and hypertensive persons.

MATERIALS AND METHODS

Fourteen males showing an average systolic/diastolic blood pressure range of 160/100 to 280/110 with cholesterol levels ranging between 270 mg/dl to 325 mg/dl and LDL levels between 105 mg/dl and 125 mg/dl. The serum cholesterol and LDL were analyzed with "E. Merck" kits following the procedure of Friedewald (1972). All these persons were on saturated fat restricted diet and were non smokers. All the persons included in the study were between the age of 40 to 55 years and were slightly over weight except two normal persons with normal values according to medical standard in addition to 14 subjects. All these persons were on routine antihypertensive drugs as advised by their physicians. During the 12 weeks study the persons on trial were not allowed any ice cream, cold drink etc. except the routine unsaturated fat control diet supplying 2700 to 3000 calories/day. Only a few gms of oils was allowed to be added to the curry in their homes uniformly. These persons were divided into two groups randomly comprising of 7 persons in each group. One group (A) was fed 40 gms of raw almonds per day with breakfast and the other group (B) was fed 40 gms raw walnut without shell per day, in 200 ml milk shake without sugar. The total cholesterol, LDL, body weight and blood pressure were recorded on first day, then after every 4 weeks. The daily blood pressure that the individuals took themselves was not considered. All these persons were allowed to carry out routine office duties. These persons were not involved in physical labour since they belonged to the group of upper middle class officials. Data was processed by using analysis of variance according to Steel and Torrie (1982).

RESULTS AND DISCUSSION

Table 1 reflects the influences of feeding 40 gm of almonds/day. The serum cholesterol reduced from an average of 300 mg/dl to 226 mg/dl after 12 weeks. This showed a gradual decrease in serum cholesterol levels. However, upto 4th week there was no effect on serum cholesterol but there after the oils supplied by the almond influenced the serum cholesterol biosynthesis. The LDL showed a similar pattern and decreased from 108 mg/dl on first day to 83 mg/dl after 12 weeks.

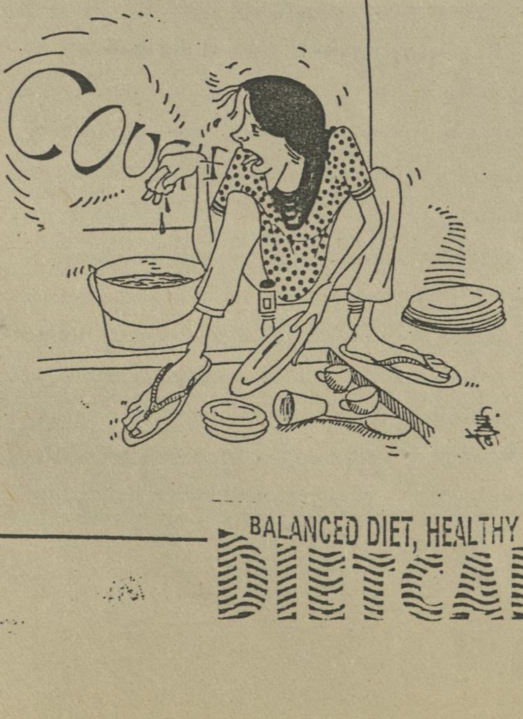
The body weight did not show any changes since the diet was being taken carefully. The average blood pressure also decreased with some discrepancy after 4 weeks where the diastolic blood pressure slightly increased but there after the systolic and diastolic both decreased. When the data was subjected to analysis of variance it was observed that cholesterol and LDL significantly ($P<0.05$) decreased whereas the body weight and blood pressure did not show significant differences inspite of the fact that visually the blood pressure decreased after 12 weeks. The decrease in serum cholesterol levels may be expected possibly due to the monounsaturated fatty acid contents of almond oil.

Previously, Chong (1988) and reported that cholesterol lowering effect of palm oil was due to its contents of monounsaturated oils. Spiller et al. (1992) and Qureshi et al. (1988) have also substantiated the good effect of monounsaturated fats on serum cholesterol.

Table 2 represents the data pertaining to walnuts feeding to man. It can be observed that total serum cholesterol gradually decreased from the initial values 290 mg/dl on day one showing significant decreases ($P<0.05$) to 242 mg%. Similarly the LDL also gradually and significantly ($P<0.05$) decreased after 12 weeks period. The body weight did not show any change but the blood pressure decreased as the period for walnut intake increased but not significantly. It was a simple and practicable trial to determine the main factors as influenced by feeding nuts in order to reduce the risk of ischemic heart diseases. Visually week 10, 11 and 12 showed same values which gave an idea that the walnut oils functioned vigorously for first 10 week and then a plateau was observed. It is interesting to mention that two volunteers with normal serum cholesterol and normal blood pressure also took the nuts but they did not show any lowering effect in their blood pressure or serum cholesterol.

It is confirmed that nut oils influenced hypercholesterolemic and hypertensive persons rather than normal people. The findings of the study in almond trial are closely associated with those of Spiller et al. (1992). The walnut trial results showed an agreement with the results of Sabate et al. (1993). These two workers had included nut oils instead of nuts in their studies.

Feeding raw nuts as was practiced in this trial being easier and practical in Pakistani culture. The almond or walnut feeding with milk did not disturb digestive system of any of the patients. However, some more work is needed to see the long term effect of nuts feeding on human serum cholesterol and other related factors. In future trials, a more detailed blood lipid profile research is needed.



دل تو چاہتا ہے کہ ہر وقت
کچھ نہ کچھ کھاتے رہیں۔
اگر آپ میٹھی چیزوں کا استعمال کثرت
سے کریں گے تو لبلبے سے انسولین
کی بجائے آنسو نکلیں گے۔

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Bulletin of
First DietCare Center

Vol. 4 No. 2 February 2000

THE RISKS OF ARTIFICIAL INFANT FEEDING: AN UPDATE.

(Parents are entitled to the truth. Parenting decisions are not always easy or straightforward. Omitting information does not contribute to a trusting relationship between parent and provider. The decision to inform parents of these facts may provoke displeasure and animosity from colleagues, for this is not a popular approach in our setting. However, doctors involved with childbearing families need to consider their responsibilities regarding the issue of informed decision making.)

Declining breast-feeding rates and the aggressive marketing of breast-milk substitutes has blurred the distinction between breast-milk and formula. Religious, cultural, and scientific beliefs throughout history have influenced what and how infants are fed. Rapid development in science, technology, and medicine, and changes in social and economic trends in late 1800s, gave birth to a new type of baby food, commercial infant formula. There are 77 hospital admissions for illness during the first four months of life in every 1000 bottle-fed infants in USA.

Formula-fed babies develop acute diseases at higher rates. Otitis media is three to four times more prevalent in formula-fed infants. Seven percent of all infants are hospitalized for respiratory infections, primarily because of the added risk of bottle-feeding. Protection by breast-milk is most evident against serious respiratory diseases (wheezing, bronchiolitis, bronchitis, and pneumonia). Respiratory syncytial virus is the most serious respiratory pathogen among infants. Formula-fed infants receive no such protection, as do those who are breast-fed. Formula-fed infants have a 10-fold risk of being hospitalized for any bacterial infection, a three- to four-fold risk of diarrheal diseases and a four-fold risk of bacteremia and meningitis in developed countries.

Formula feeding is consistently associated with immune system disorders. It accelerates the development of celiac disease. It is a risk factor for Crohn's disease and ulcerative colitis in adulthood. It accounts for two to 26 percent of childhood onset insulin dependent diabetes mellitus. It imposes a five- to eight-fold risk of developing lymphomas in childhood under 15 years of age if they are formula-fed or breast-fed for less than six months. It may impair antibody response to oral and parenteral vaccines compared to breast-fed infants. Seventy-nine percent of deaths from sudden infant death syndrome (SIDS) in New Zealand are attributable to three factors- maternal smoking,prone infant sleeping position, and not being breastfed. A multicentral study in British neonatal units showed breastfeeding to be the single most effective method of preventing necrotizing, enterocolitis in preterm infants. It was twenty-times more common in those babies fed only formula. Formula-fed preterm infants are at higher risk for respiratory failure, bronchopulmonary dysplasia and retinopathy of prematurity if their diet is not supplemented with inositol during the first week of life.

Formula-fed premature infants had lower IQ scores at age seven to eight years than breastmilk-fed premature infants even after adjustment for the mother's education and social class. Allergic reaction in formula-fed infants include wheezing, vomiting, diarrhea, eczema, malabsorption, and failure to thrive. Up to 7.5 percent of formula-fed infants demonstrate allergy to cow's milk-based formulas. Up to 50 percent of children sensitive to cow's milk show soy hypersensitivity also. Infant formula lacks docosahexaenoic acid (DHA), an essential omega-3 fatty acid and lacks other of the essential fatty acids necessary for the proper brain development.

Formula-fed infants experience much higher plasma levels of most amino acids consistently elevated blood urea levels. This implies a decreased efficiency of utilization of the protein in the formula. Infants fed follow-up formulas with higher protein levels (2.0 and 2.9 g/dl) had lower plasma zinc levels and increased potential for suboptimal growth and development. Formula-fed infants are at risk for neonatal hypocalcemic tetany. This is due to the high phosphate load in formula and the lower calcium retention in newborns fed formula.

Formula-fed infants receive a food containing over 20 times the amount of iron found in breast milk. Concern exists that this may interfere with the infant's resistance to infection and the absorption of trace minerals such as zinc and copper.

Formula-fed infants are at a higher risk for ingestion of lead, aluminum, and other heavy metals as well as iodine. Label instructions advise to boil water for five minutes before mixing formula. However, this action concentrates any lead in the water, thus exposing infants to substantial amount of lead with each feed, depending upon the amount of lead in the

SUMMARY

1. Formula and breast milk are not the same.
2. Breast milk is species specific, designed to promote brain growth and protect against both acute and chronic diseases.
3. Breast milk promotes development of the infant's genetic potential.
4. All formulas are not the same. Standard ones are based on cow's milk. Seven to eight percent of babies are allergic to cow's milk formula; 50 percent of these babies are also allergic to soy formulas. Use of cow's milk is not recommended until after the baby is one year old.
5. Formula is expensive to use; it costs Rs: 5,000 to 10,000 for one year's supply.

Chief Editor, Dr. Sultan Mahmood (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30 Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

66

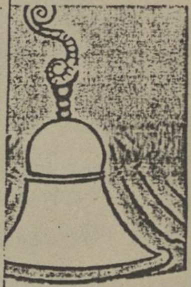
Bulletin of
First DietCare Center

Vol. 4 No. 3 March 2000

VIAGRA - Still A "News"

DISCOVERY:

At one of the centres, trials for an antihypertensive drug were being conducted on the elderly. One of the side efforts reported frequently was ERECTION - Blessing in disguise?



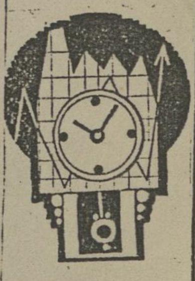
PHYSIOLOGICAL MECHANISM OF ERECTION:

This involves the relaese of nitric oxide in corpus cavernosa during sexual stimulation. No then activates the enzyme guamyl ate cyclase, which results in an increase in levels of cyclic guanidine mono phosphate GMP causing smooth muscle relaxation in corpus cavernosum allowing inflow of blood.

This wonder drug inhibits phosho diesterase type 5 (PDES) which is responsible for the degradation of C-GMP. This leads to smooth muscle relaxation & flow of blood. In the absence of sexual stimulus increased levels of C-GMP, has no effects.

PHARMACO KINETICS & METABOLSM:

It has an absolute bio-availablity of about 40%. It is eliminated pre-dominantly by hepatic metabolism - CYTO CHROME P450. VIAGRA is rapidly absorbed. Maximum plasma concentrations are reached within 30-120 minutes (average 60 min).



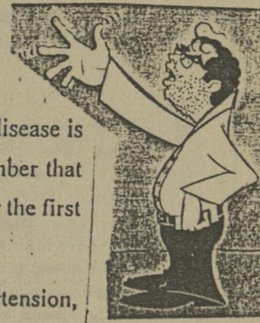
PHARMACODYNAMICS (ERECTILE RESPONSE):

Action starts within an hour and lasts up to 4 hours. VIAGRA on a 5 point's scale showed marked improvement in all aspects of sexual function i.e. frequency, firmness & maintenance. Frequency of orgasm is increased frequency and level of desire is satisfactory. There is increase in enjoyment & overall relationship satisfaction improves. Trials have shown that it works in problems of orgasm,

psychogenic and mixed etiologies. It has been shown to be effective regardless of sensitivity, etiology, race & age. The patients include those with a history of coronary artery disease, hypertension, peripheral vascular disease, D.M. depression CABG, radical prostatectomy, Turp. Spinal Cord injury, and patients taking medicines e.g. antihypertensives, diuretics, antidepressants and antipsychotics.

CONTRAINDICATION:

It potentates the effects of nitrates, hence concomitant use is prohibited. Severe liver & renal disease also requires careful administration.



WARNINGS:

Cardiac risk of sexual activity in patients with preexisting cardiovascular disease is marked. It also causes transient decrease in supine blood pressure. Remember that trials in the elderly were for BP control. The anti-hypertensive effect was for the first one & a half to 2 hours and drug is excreted after 8 hours.

Caution may be exercised in-patients of MI, stroke, arrhythmia's, hypertension, cardiac failure or angina. It should also be used with caution in patients with deformation of penis as angulation can cause injury and resultant FIBROSIS OF PENIS.

DOSAGE:

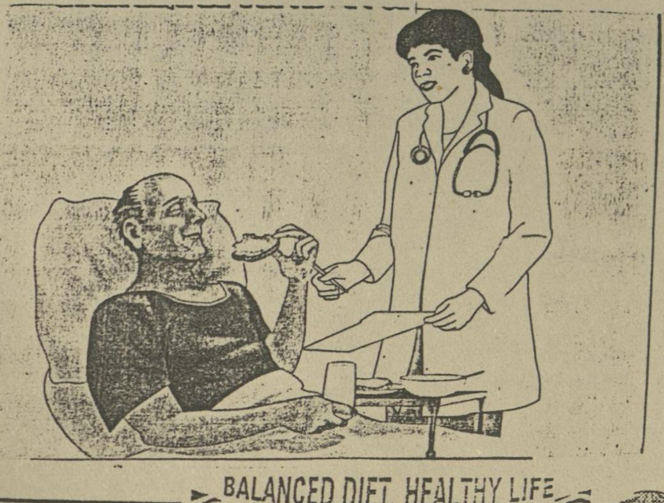
Supplied in 25, 50 & 100 mg. (Dose 25 mg in elderly with mild liver disease etc.)

SIDE EFFECTS:

Headache flushing and dyspepsia are common. Visual effects comprise of altered colour differentiation. Visual acuity is decreased. Serious cardiac events like MI, sudden cardiac arrest, ventricular arrhythmia, CVA and TIA have also been reported.

PRIAPISM is also a potentially dangerous side effect. If this persists for more than four hours (max 6 hours) medical assistance should be sought, otherwise penile tissue damage and permanent loss of potency may occur.

First Dietcare Centre
Under the Guidance of American Dietetic Association (ADA), USA



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BALANCED DIET, HEALTHY LIFE
DIETCARE

HUMAN BODY STATISTICS

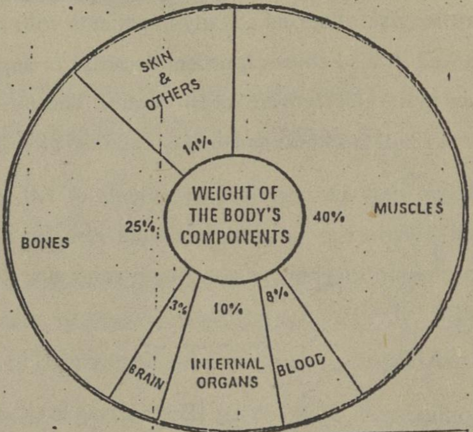
The history of planet Earth began about 4.6 billion years ago. Few creatures that lived on Earth in the first four billion years are preserved as fossils. Millions of new species appeared and disappeared during evolution. Scientists have identified about 1.5 million living species. Of these, the human being is the most important species on Earth.

The human body is made of cells, each less than 1/50 of a millimeter wide. An adult body consists of about 75 trillion cells. A chain 1,900,000 kilometers long can be formed by connecting these cells end to end. Each cell has a nucleus. If the spiral of DNA in the nucleus of just one human cell were stretched out in a single line, it would extend nearly 1.8 meters.

The largest organ of the body is skin (14% of total body weight). Total thickness of skin is 2 millimeters (Epidermis: 0.2 mm, Dermis: 1.8 mm). Skin has 5 million hair follicles. Total number of scalp hair are about 100,000. One loses 50-100 hair per day normally from scalp. Average rate of scalp hair growth is one centimeter per week. Finger nails grow at a rate of about 4 centimeters per year. Toenails grow at a rate of about one to two centimeter per year.

A newborn has 350 soft bones, but many of these fuse together as the baby grows. That is why an adult skeleton consists of 206 bones. The skull is made by 29 bones. The 20 milk teeth are equally divided between the uppper and lower jaws, as are the 32 premanent teeth. An adult straining to lift a 40 kg. item. subjects the lower discs to nearly 600 kg. of pressure. The longest bone is the femur and the smallest bone is the stapes. The largest nerve is the sciatic nerve. Sartorius is the longest muscle of the body.

At birth, the brain's weight is 300-400 gms. In adults, its weight is 1,300-1,400 gm which decreases to 1250-1350 gms. in old age. If the ridges on the surface of the cerebrum were smoothed out, the cerebral cortex would cover over 2,000 square centimeters. In adults, the length of the spinal cord is 45 cm and its weight is 30 gm. In the fastest conducting nerves, an impulse travels at about 300 feet (91 meters) per second, and smaller nerves conduct impulses at about 5-6 feet (1.5 - 1.8 meters) per second.



When a person rests, the heart beats 60 - 80 times and pumps 5 - 6 litres of blood a minute. Mild exercise raises the heart beat to 100-120 times a minute and the blood flow is 7-8 litres a minute. Strenous exercise increases the beat to upto 200 times a minute, moving 30 litres of blood a minute.

Red blood cells live for 100-125 days and are then removed by the liver or the spleen. White blood cells live for 13-20 days and are removed by the liver. Platelets live for 10 days and are then removed by the spleen. The liver consists of 50,000 to 100,000 tiny units of tissue, called lobules.

The small intestine is 5.5 to 7 meters long and is lined by thousands of fingerlike protrusions, called villi. This lining, if flattened out, would cover about 4,500 square meters. Each villus is covered by about 5000 columnar cells and each columnar cell contains about 1,000 microvilli. The large intestine is about 1.5 meters long.

The blood entering the kidney through the renal artery is filtered through nephrons, about one million in each kidney. The kidneys clean the entire volume of blood about 240 times a day, a total of about 1,800 litres is cleaned daily in an adult.

Sperm cells form along coiled membranes in the testicles, called seminiferous tubules. The process takes about 74 days and involves several cell divisions. Ejaculation releases upto 300 million sperms, only one of which will fertilize the egg.

At birth, a female has between 200,000 and 400,000 eggs in their ovaries. At puberty, that number will have dwindled to about 10,000. Of these, about 400 will be released at the rate of one about every 28 days.

EYE DIAMETER	LUNG WEIGHT
Front to rear = 0.95 in(24.2mm) Left to right = 0.93 in(23.8mm) top to bottom = 0.93 in(23.7mm)	Right:700-800 gm left:650-700 gm

BODY	MALE	FEMALE
1.Brain weight(approx)	1,420gm	1,250gm
2.Heart weight	300gm	250gm
3.Kidney weight	150gm	135gm
4.Liver weight	1,400-1,800gm	1,200-1,400gm
5.Stomach capacity	1.5-2 Litres	1.2-1.5 Litres
6.Blood volume	75 ml per kg body mass	65 ml per kg body mass

Causes of male infertility

It is not just the women who can suffer from infertility, men are equally susceptible. Research in the West proves that 50 per cent of cases of childlessness are due to primary or secondary factors of female infertility whereas 40 per cent are due to primary or secondary factors of male infertility. While the remaining 10 per cent are unexplained — where all indicators of health, mental and physical, are up to the mark and there is a wholesome environment but the couple is unable to conceive. Yet many of the causes are reversible and can be treated by medicines, a change in life style or surgery. Only a few cases are termed irreversible or sterile.

In a country Pakistan where women bear the brunt of any mishap in a marriage, male infertility is hardly ever mentioned. Male infertility can be caused by the following factors:

Structural defects

These could be defects existing since the time of birth or due to an injury:

- The improper descending or development of testicles during fetal life
- Any structural abnormality since birth or any later injury that can lead to deformity of the penis can disrupt the adequate delivery of sperms
- Any swelling, painful or otherwise, in the testicles or inflammation in the skin covering them as a result of injury or illness.

Illness induced infertility

Extremely high-grade fever at any time in your life can damage the ability to produce healthy sperms. Illnesses like mumps and some sexually-transmitted diseases like gonorrhea, are a frequent cause of male infertility. In some cases the sperms are malformed and have a short life span. Inflammatory infections of the prostate and testicles can cause irreversible infertility if they occur before puberty. Malfunction of the Endocrine system that controls the hormones which influence the development and health of the sperms.

Drug or chemically induced infertility

Sedatives and relaxants can cause low sperm production. Other addictive substances such as tobacco, alcohol and excessive caffeine consumption also effect sperms. Certain drugs used to treat hypertension, arthritis, and digestive disease, as well as chemotherapy drugs are associated with sperm production problems and infertility. Pesticides such as Dibromochloropropane is a known cause of infertility. Industrial exposure to arsenic and lead can lead to an overdose in the body and cause infertility.

External factors effecting male infertility

- Being over active or under active in sex may lead to disorders in sperm production
- Extremely tight clothing that inhibits blood flow to the organs in question
- Sitting for long periods of time like during a long drive
- Taking a long bath in hot water
- Working in the proximity of extreme heat, like for example near a kiln or a *tandoor*

Psychological factors

Last but not the least the stress of work and a fast-paced life can adversely affect the hormones that streamline the functions of our body. Fertility is no exception. The stress to perform sexually and be able to father a child is as debilitating for a man as is the stress of not conceiving for a woman. The taboos and misconceptions leading to guilt attached with his sexuality are another stressful influence on the psychological factors of infertility in a man.

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Bulletin of
First DietCare Center

Vol. 4 No. 5... | May 2000 | Page 17

Management of hypertension - an update

The management of patients with hypertension requires a therapeutic plan aimed at reducing blood pressure and overall cardiovascular risk. We have provided an overview of the current management guidelines as well as an update on new issues.

Current recommendations for target blood pressure

- -below 130/85 mmHg: for young and middle-aged people (<65 years), those with diabetes and renal insufficiency
- -below 140/90 mmHg: for older people (>65 years)[1,2]

Lifestyle interventions are for life, even when the patient is prescribed an antihypertensive agent

Follow-up patients to ensure that they maintain a regular exercise program and healthy diet, limit their salt and alcohol intake, lose weight and quit smoking, if applicable.

Use thiazides and/or beta-blockers as first-line therapy except in those patients where there are compelling indications to use other drug classes

Although treatment options have expanded in recent years, low dose thiazide diuretics and beta-blockers have consistently reduced morbidity and mortality in the main randomized controlled hypertension trials.[3,4] Morbidity and mortality studies are being conducted internationally to establish the relative benefits of other classes of antihypertensive agents.

Low dose thiazides are safe and effective

There is a flat dose-response relationship for the antihypertensive effect of thiazides with little benefit gained from doses above those equivalent to between 12.5 mg (very low dose) and 25 mg (low dose) of hydrochlorothiazide. This dose range has been shown to cause fewer major metabolic side-effects than higher dose therapy.[5,6]

Limit use of indapamide to patients in whom an advantage can be anticipated

Indapamide has a similar effect to low dose thiazide diuretics on total cholesterol and a lesser effect on triglycerides.[7] There is no evidence that it is superior to low dose thiazide diuretics but it is considerably more expensive.

Select drugs based on compelling indications/ contraindications

The WHO-ISH Guidelines detail the compelling and possible indications and contraindications of drug classes for patients with co-existing conditions.[1] For example, there are compelling indications to use an ACE inhibitor in patients with diabetic nephropathy or heart failure unless contraindicated because of bilateral renal artery stenosis, and there are compelling indications to use beta-blockers in patients post myocardial infarction or with angina unless contraindicated because of co-existing asthma.

Reserve angiotensin II (AT II) receptor antagonists for those patients in whom there is a clear indication for an ACE inhibitor but are intolerant because of an ACE inhibitor induced cough

There are no results yet of randomized controlled trials with AT II receptor antagonists measuring long-term health outcomes in hypertensive patients. In trials to date, adverse event rates were low and similar to placebo. The incidence of cough was one per cent for AT II receptor antagonists and 5.5 per cent for ACE inhibitors.[8]

New Issues

Combination antihypertensive agents should not be used for initiation

When drug treatment is needed, patients should start with one drug only.[2] The Drug Utilization Sub-committee of the Pharmaceutical Benefits Advisory Committee tracked new prescriptions for products containing irbesartan or fosinopril in combination with hydrochlorothiazide. The data showed that 17 per cent and 16 per cent of patients respectively had not previously been dispensed an ACE inhibitor, AT II receptor antagonist or a thiazide diuretic in the four month period prior to starting the combination product.[9]

Where two drugs are required to control blood pressure, consider that the fixed doses in combination products make it difficult to titrate the dose to achieve optimal control of blood pressure. However, combination products may offer the right drug and dose combination once the patient is stabilized. The use of a fixed dose combination product in this situation may benefit some patients in terms of compliance.

Alpha-blockers no longer recommended as an initial treatment option for hypertension

An alpha-blocker, doxazosin (not available in Australia) has been linked with an overall increase in major cardiovascular events compared to a thiazide diuretic based regimen in the ALLHAT study.[10] Most significantly, an increase in the 4-year cumulative congestive cardiac failure incidence from 4.5 per cent with a thiazide diuretic based regimen to 8.1 per cent with an alpha-blocker based regimen was shown. An increased risk of stroke and combined coronary heart disease, particularly angina and coronary revascularisation, was also shown with an alpha-blocker based regimen compared to a thiazide diuretic based regimen.

The Heart Foundation has changed its recommendations from those previously outlined in the 1999 Guide to Management of Hypertension for Doctors' to advise that alpha-blockers should not be considered as initial treatment for hypertension. For patients without congestive cardiac failure, alpha-blockers are still recommended to relieve symptoms of benign prostatic hypertrophy, or in combination with thiazide diuretics or beta-blockers when monotherapy has failed to achieve good blood pressure control.

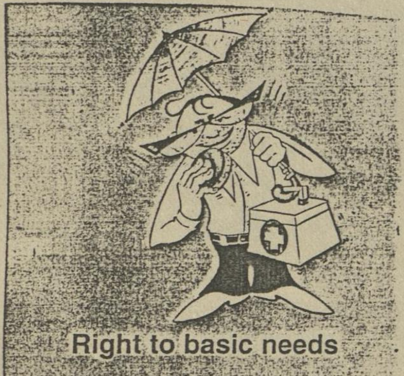
Calcium channel blockers - the debate continues

The debate continues as to the potential beneficial and detrimental effects of calcium channel blockers (CCBs) used as antihypertensive agents. A meta-analysis of nine trials (27,743 patients) showed that CCB use was associated with a significantly higher risk of myocardial infarction, congestive cardiac failure and combined major cardiovascular events compared to other antihypertensive agents. However, there was no significant difference found for outcomes of stroke and all-cause mortality.[11]

Another meta-analysis of six of the same nine trials (26,129 patients) showed a reduced risk of stroke and an increased risk of coronary heart disease among patients receiving CCBs compared with diuretic or beta-blocker based regimens. Since these trends were similar in trials of dihydropyridine CCBs (e.g. amlodipine, felodipine and nifedipine) and non-dihydropyridine CCBs (e.g. verapamil and diltiazem), they do not support a difference in effect of these agents on coronary risk. Diltiazem and verapamil were not shown to have a reduced effect on the avoidance of stroke.[12]

Updated table according to the drugs available in Pakistan

Generic drug name	Product name / situation in Pakistan	Low dose equivalent	Very low dose equivalent
Thiazide diuretics			
bendrofluazide 5 mg	Not available	2.5 mg (1/2 a tab)	Not practical
hydrochlorothiazide 25 mg	Not available	25 mg (1 tab)	12.5 mg (1/2 a tab)
hydrochlorothiazide 50 mg	Not available	25 mg (1/2 a tab)	Not practical
Thiazide like-diuretics			
indapamide 2.5 mg	Natrilix® (available)	Not practical	Not practical
indapamide 1.5 mg	Natrilix SR® (available)	1.5 mg (1 tab)	Not possible
chlorthalidone 25 mg	Not available	25 mg (1 tab)	12.5 mg (1/2 a tab)



Stop it from
Shooting Up
or Sinking Down

Control your
Blood Pressure

Always keep a
check on it for
ensuring
good health.

First Dietcare Centre
Under the Guidance of American Dietetic Association (ADA), USA

BALANCED DIET, HEALTHY LIFE
DIETCARE

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72

72

Bulletin of
First DietCare Center

Vol. 4 No. 6 June 2000

PHYTOTHERAPY

Definition: Treatment of disease with medicinal plants and derivatives.

The traditional system of medicine, known as UNANI system of medicine, in this region of Asia, (Unani: Arabic word for Greek) is based on using leaves, flowers, seeds, roots, etc, of medicinal plants, in fresh or dried form, and dispensed as concoctions, powders, syrups, pills or in their original form.

The great proponent of this form of traditional system of medicine in this region of Asia was the great Persian philosopher and scientist of 9th century named Avicena(Ibni Seena in Arabic) who drew inspiration from the Greek classical learning, especially from the great ancient Greek philosopher Aristotle. Hence the name UNANI (Greek) given to it in this part of Asia.

This system was the family occupation of the writer who remained associated with it from the early childhood. Later on, while studying the pharmacology of the Modern Medicine in a medical system, developed further association with medicinal plants with which he was already familiar from the childhood, as they were found to be integral part of teaching of the modern medical system.

The difference was that now they were dispensed and administered to patients in concentrated and refined form, such as spirits, tinctures, extracts, etc. Further, the dispensing and administering needed very small doses like minims (drops), grains or grams, in contrast to bulky doses as given in Traditional medicine.

Tremendous development has now taken place due to the untiring efforts of our scientists and researchers since it was originated. In comparison to this, the Traditional system ahs remained static or progressed very little.

But it is a fact that despite the tremendous progress made by the Modern Medicine, a vast majority of people, especially those living in far flung areas in underdeveloped and undeveloped countries, cannot benefit from this modern system of therapy due to some reasons or other. Hence this section of population has to depend upon the Traditional system as an alternative choice for the following reasons;

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1. It is cost effective
2. The medicines are easily and in many cases locally available even in remote areas. The modern therapeutic agents, on the other hand, are generally available in the developed areas only;
3. The cost involved in expensive modern means of diagnosis and investigation is beyond the means of a lot of people;
4. The plant medicines are usually less potent, hence have very little or no side effects.

The lengthy article on this subject appearedin the National Geographic Magazine in the April 2000 issue. It contains a lot of interesting and useful information on this subject. I am reproducing some excerpts from it here for the benefit of our learned readers.

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I wish I could reproduce it in some more detail, but much space in our valued journal my not be available. Hence, I am quoting from it very briefly. I quote:

"Now the long term survival rate of childhood leukemia is above 90%, thanks in part to vincristin, a chemotherapeutic drug, made from Madgasker rosy periwinkle. Vinlastin, another drug made from the same plant, helps to cure most cases of Hodgkin disease."

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First Dietcare Centre

Camphora: Extract of Cinnamomum Camphora is used as a natural sedative and antispasmodic. It is also valuable as a decongestant in inhalers and as an insect repellant.

Quinine: This extract from the bark of Cinchona Succyruba is good for relieving fevers. For years the main treatment for malaria, it could be about to make a comeback.

Cinnamon: The bark of Cinnamomum Cassia provides remedies for digestive complaints such as flatulence and diarrhoea. It is said to be good for colds and flu

Digitalis: Better known as foxglove, it provides digitalin, one of the great herbal success stories in modern medicine. It is widely used in the treatment of heart disease.

Lily of the valley: The extract of Convallaria Majalis is known as a treatment for heart complaints. The action of the medicine closely resembles that of digitalin.

"Digitalis" which is used in the treatment of heart failure, comes from the leaves of foxglove, a plant, the ephedrine, a component of commonly prescribed respiratory medicines, is derived from a chemical formula from ephedra plant."

"But over all, in the past forty years there has been very little development in new plant base pharmaceuticals. During that period the US Food and Drug Administration (FDA) approved fewer than a dozen drugs derived plants. There is a limited incentive to base drug development on plants. Still almost two thirds of Earth 6.1 billion people rely on the healing power of plants; for them nothing else is affordable of available.

Conclusion: Phytotherapy is not a separate entity. It is the original and ancient means of fulfilling the health needs of the people by employing the easily and most often locally available agents, which are mostly the vegetation or other agents available around their habitats and which are by experience found to fulfil their health needs.

As a result of continued efforts and research, man has improved his lifestyle and made progress in all the fields of life, health being no exception. Thanks to the efforts of our scientists and researchers, we have now reached a stage where most modern, and most expensive tools, means of diagnosis and treatment are available to us, e.g laser, atomic devices, nuclear devices, like X-Rays, Ultra Sound, MRI. Many more are yet to come, to meet our health requirements as means of diagnosis and treatment....

However, we now realize that the vast majority of our population are unable to avail themselves of and afford all these modern and expensive means. These are the living in far off areas in developing and underdeveloped countries, who are unable to benefit from modern system. Hence they have to resort to other alternative options like "phytotherapy" (or traditional Medical system) which, besides being cost effective, is easily and most often locally available to them even in remote areas too.

It may be noted that in China and Pakistan (and perhaps in some other countries too) both systems are running successfully and under the government patronage.

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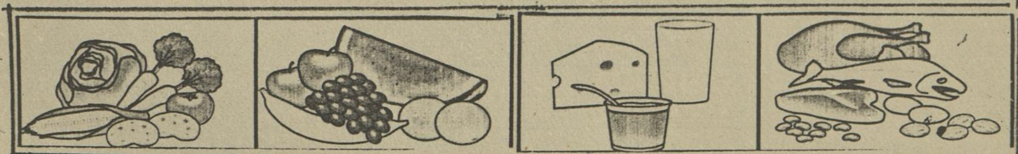


BALANCED DIET, HEALTHY LIFE

DIETCARE

Bulletin of
First DietCare Center

Vol. 4 No. 7

July 2000

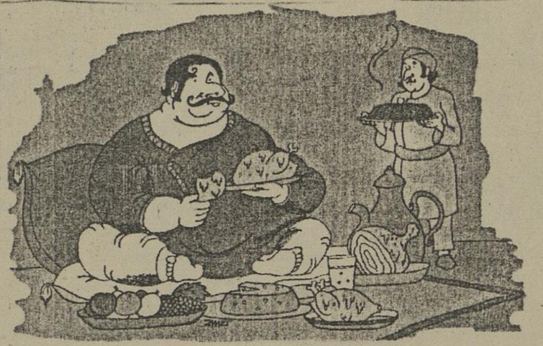
Watch your meat Intake

THE epidemeological studies often carried out globally have clearly revealed a strong relationship between the emerging increasing rate of chronic diseases and the long-term dietary habits along with modern life style. According to surveys the chronic diseases such as cancer, coronary heart ailments, hypertension, arthritis, gout etc. are more common among the families of high status as compared to people from the low income group. The diet of rich is also rich in meat and fat, in contrast to the simple meal of the poor population consisting mostly of carbohydrates, plant proteins (instead of that of animal) and a considerable consumption of 'dietary fibers' from cereals, vegetables and fruits. The RDA (recommended daily allowances) value of dietary fibers is suggested as 25-35 g and in modern medical ethics the dietary fibers are regarded as anti-cancer, anti-coronary heart diseases (CHDs), anti-hypertensive, anticholestemic etc while excess red meat is just the reverse i.e. pro-cancer, pro-CHD etc.

The Eidul Azha is at our doorstep and we are about to welcome the festival with *kabab, karahee, istu,* grill meat, liver, *biryani* and what not, that will continue for days. So naturally we will be consuming, mostly animal proteins and saturated animal fat which is the 'hidden fat' present in between the muscles. The animal fat is responsible for synthesis of free cholesterol, triglycerides and LDL-cholesterol (low density lipoproteins), the constituents of the blood profile which in excess indicate the danger of CHDs.

It is relevant to know the composition of lean meat from various sources given below:

The nutritionists believe in the appropriate distribution of calories of macronutrients in a balanced diet which suggests 58 per cent of total energy from carbohydrate, 30 per cent from fat and only 12 per cent from proteins. Not only that but an optimal nutritious meal should include major portion of proteins from plants thus recommending only a small portion of meat in our daily diet.



Meat does not contain any carbohydrate or it may be present only in negligible amount. Glycogen, a polymer of glucose, is the only carbohydrate that is present in meat, which, during the slaughtering, gets converted into glucose and then into lactic acid due to stress the animal feels at that time. The glycogen is almost absent from the meat (dead tissues) that we eat, while 100-300 g of carbohydrates must be consumed daily with fat and proteins to make meal healthy and beneficial.

The animal fat in organ meat is much more than in the lean meat especially in liver which is surrounded by fatty tissues. However lean meat as indicated above by its composition represent about one-forth of the total fat required daily and is fairly rich in saturated or bad fat. The fatty acids present in edible animal fat are either saturated or unsaturated. The unsaturated fatty acids are again of two types mono-unsaturated (means two hydrogen less) or poly-unsaturated (many hydrogen less). The saturated fat is easily converted into cholesterol in the body while mono and poly-unsaturated fatty acids produce useful compounds. However, poly are prone to oxidation, generating the free radicals responsible for deposition of fat blocking the arteries and to promote the synthesis of carcinogenic end products. The mono-unsaturated are the least alarming and make canola, olive and soya bean oil healthy while meat fat in big quantity is full of problems.

Cholesterol (mg)

Meat (3 oz)	
Veal	100
Beaf, mutton, chicken	70-85
Organ meat	
Brain	1969
Liver	410
Kidney	329
Egg yolk	213
Fish	50-60
Shrimp	105
Milk 1 cup	30-35
Plant foods	0

Constituents of edible portion in %

Animal	Water	Protein	Lipid	Ash	Carbohydrates
Beef	70-73	20-22	4-8	1	less than 1
Lamb	72-73	20-21	5-6	1.6	-do-
Pork	68-70	19-20	9-11	1.4	-do-
Chicken	73-74	20-23	4-5	1	-do-
Cod	80-81	17-18	0.3	1.2	-do-
Salmon	64-65	20-22	13-15	1.3	-do-

The ADI (average or adequate daily intake) of cholesterol is about 300 mg/day and the cholesterol content of meat is in acceptable range as compared to other animal food, yet red meat should be consumed not more than twice or thrice a week in view of saturated fatty acids which increase cholesterol level. The consumption of organ meat is increased manifold during Eidul Azha and the amount of cholesterol should be diluted by taking vegetables, fruits and cereals which are rich in carbohydrates and do not contain any cholesterol.

Red meat supply of iron is about three-fold versus the white meat and the other dietary important minerals are also more in quantity. A small piece of beef or chick will be sufficient to provide the RDA (15 mg) in adults. So, the large consumption of red meat may overload iron which is observed in Africa and is related to hereditary diseases. Excess of iron in elderly people contribute to rich exudative environment in cytoplasm leading to rapid LDL — cholesterol oxidation — the adverse condition for cardiovascular network. The oxidation process also generate free radicals (the highly reactive molecules initiating chain reactions and damaging cellular membrane) responsible for variety of cancers.

	Minerals mg / g of meat	
Mineral	chicken	beef
Calcium	3.21	4.62
Phosphorus	'200	202
Zinc	0.41	2.99
Iron	0.99	2.78

Impact of high protein and low carbohydrate diet:

Animal protein on the one hand increases the absorption of iron from plant source due to a substance present and referred to as meat factor, but on the other the high intake of meat increases calcium excretion in urine causing decrease in the bone density. The animal proteins are rich in sul-

cont.... P/26

Cont.... P/25

phur containing amino acids, contributing to high acidity. The calcium from bone come for neutralizing the acidic atmosphere. The salts formed by the combination of acids and calcium are excreted in urine by kidney. The loss of calcium in bones is a disease called osteoporosis, common among people taking high protein and low carbohydrate diet. The osteoporosis is a disease being caused by many factors. Apart from calcium deficiency, it is also due to lack of physical exercises, smoking and alcohol intake.

Numerous collated data and gathered information have proved that colon cancer is common among the regular red meat consumers, mainly because of high protein and low fiber (carbohydrate) intake.

The grilled red meat or the meat cooked at high temperature and in excess fat produce harmful nitrogenous compounds initiating the cancer growth.

The kidney load of expelling the end products of protein utilization (i.e. urea and other nitrogen containing compounds) increases in high protein diet resulting in dysfunction or kidney failure especially among diabetic patients. Health-conscious people on the low-protein diet, taking just sufficient quantity of animal proteins, are away from kidney diseases even in the later part of their life.

Meat, being a good source of nutrients, is easily attacked by variety of microorganisms especially bacteria such as Escherichia Coli, Shigella, Vibrio, Clostridium etc. Severe contamination may cause food poisoning and infections. The way meat is handled in the slaughter house, transported, distributed and sold at shops is extremely unhygienic, unsafe and contaminated. The whole system needs modification, improvement and orientation.

The high carbohydrate diet consists of fibers, carotenes, and many phytochemicals to reduce effects of loaded-meat diet during the festival.

The latest permutations in the knowledge of nutrition have validated the restricted calories from animal proteins and the major portion of our food plates should be occupied by plant foods to keep diseases at a distance. ■

Degree of saturation / unsaturation of animal fatty acids%

Animal	Saturated	Mono-unsaturated	Poly-unsaturated
Beef	40-71	41-53	0-6
Mutton	46-64	36-47	3-5
Pork	39-49	43-70	3-18
Chicken	28-33	39-51	14-23
Cod (fish)	30	22	48
Mackerel	30	44	26

Glycemic Index گلائی سیمک انڈکس

نام	اردو نام	گلائی سیمک انڈکس
Cereals	اناج	
Cornflakes	کارن فلیکس	80
Puffed rice	پھولے ہوئے چاول	73
Weetabix	ویٹا بکس	69
Shredded wheat	کوٹی ہوئی گندم	67
Mucsli	میوسلی	66
Kelloggs Special K	کیلاگس سپیشل کے	54
Kellogs All-Bran	کیلاگس کا چھان	52
Porridge oats	جئی کا دلیا	49
Pulses	دالیں	
Baked beans	پکائی ہوئی پھلیاں	48
Butter beans	مکھن اور دال	36
Chick peas	نخود مصری، مصری چنا	36
Blackeye beans	لوبیا	36
Haricot beans	سیاہ چشم لوبیا	31
Kidney beans	لوبیا، باقلا	29
Lentils	مسور	29
Soya beans	سویابین	15
Dairy Products / Substitutes	ڈیری مصنوعات	
Ice cream	آئس کریم	50
Yoghurt	دہی	36
Whole Milk	بالائی دار دودھ	34
Skimed milk	بالائی نکلا دودھ	32
Vegetables		
Parsnips (Cooked)	(ایک قسم کی گاجر پکائی ہوئی)	97
Potato (baked)	آلو (دم پخت)	85
Potato (New)	آلو (نیا)	70
Beetroot (cooked)	بیخ چقندر (پختہ)	64
Sweet corn	دودھیا مکئی	59

انگریزی نام	اردو نام	گلائی سیمک انڈکس
Sugars	شکر کی اقسام	
Glucose	گلوکوز	100
Maltose	مالٹوز	100
Honey	شہد	87
Sucrose (sugar)	چینی، قند	59
Fructose (fruit sugar)	قدرتی شکر (ثمری شکر)	20
Fruit	پھل، ثمر	
Watermelon	تربوز	72
Pineapple	انناس	66
Melon	خربوزہ	65
Raisins	کشمش، منقی	64
Banana	کیلا، موز	62
Kiwi fruit	کیوی پھل	52
Grapes	انگور	46
Orange	نارنگی	40
Apple	سیب	39
Plum	آلو بخارا، آلوچہ	39
Pear	ناشپاتی	38
Grapefuit	چکوترا	25
Cheeries	شاہ دانہ، گیلاس	25
Grains & Grains Product	اناج اور اناج کی مصنوعات	
Frenchbaguette	فرنچ بیگوئٹ	95
White rice	ابلے ہوئے چاول	72
Bagel	پنیری روٹی، خمیری روٹی	72
White bread	چھنے ہوئے آٹے کی روٹی	70
Ryvita	رائیتہ	69
Crumpet	کلچہ	69
Brown rice	تڑکے والے چاول	66
Pastry	پیسٹری	59
Basmati rice	باسمتی چاول	58
White spaghetti	میدے کی سویاں	50
Instant noodles	انڈے ملے آٹے کی سویاں	46
Wholegrain wheat bread	سالم گندم کی روٹی	46
Wholemeal spaghetti	سالم اناج کی سویاں	42
Wholegrain rye	سالم رئی کی روٹی	41

انگریزی نام	اردو نام	گلائی سیمک انڈکس
Sweet potato	شکر قندی	54
Peas	مٹر	51
Carrot	گاجر	49
bread		
Barley	جو	26
Snakes & Drinks	ہلکی پھلکی غذائیں اور مشر	
Lucozade	لوکوزیڈ	95
Jelly beans	جیلی بین	80
Corn chips	کارن چپس	72
Fanta	فانٹا	68
Mars Bar	مارز بار	68
Squash (diluted)	سکواش	66
Muesli bar	میوسلی بار	61
Potato Crisps	آلو کے تلے ہوئے قتلے	54
Orange Juice	نارنگی کا رس	46
Apple Juice	سیب کا رس	40
Peanuts	مونگ پھلی	14

FIRST DIETCARE CENTRE

Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com. Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

BALANCED DIET, HEALTHY LIFE

DIETCARE

First Dietcare Centre
BULLETIN

Vol. 5 No. 1 March 2002

water

Today our domestic problem is lack of fresh drinking water. Today, approximately 15% of the world's total consumption of energy is supplied by hydroelectric generation.

In this manner, fossil fuel is not utilized and the power supply is renewable continuously as water evaporates form the ocean and falls to earth to collect in the high mountains.

Dams have been known to disrupt river ecosystems, which have destroyed resident fish population and in some places changes in river flow could possibly alter climate.

The winds, which results from the warming of the atmosphere by the sun is as an indirect form of solar energy in which the radiant of the sun is transformed into mechanical.

It is sporadic over much of the earth surface varying indirection and magnitude, and like direct solar energy, wind power is widely dispersed form of energy. Harnessing wind energy to generate electricity has great potential and is more profitable in areas that receive fairly continual winds such as islands coastal areas, mountains passes and grasslands. It is in fact, the most cost competitive of all forms of solar energy. It is hottest month May and June and lack of fresh water for drinking it has become problem for citizens for Lahore and especially it has become big problem for Indus and Thar's local bodies they are still depending on the pools water which is not good for their health.

Now may the monsoon, the rainy weather should set in throughout Pakistan. In the Philippines, wood plantations are currently managed for present and future wood fuel power plants.

Denmark is using windmills to generate energy and Brazil has significantly reduced its reliance on imported oils by converting sugarcane crops into alcohol fuels. Photovoltaic cells are being manufactured in india Algeria and Yugoslavia, Hungary and Mexico are using increasingly larger amounts of geothermal energy and in California a power plant generates electricity solely from the combination of old tyres.

Pakistan has variety of energy options to exploit, but is currently unable to meet its power requirement primarily because wind and solar energy remains underdeveloped.

Recent research has shown the viability of solar energy for fresh water heating and powering lift pumps in villages.

In fact we could not solved the problems of providing fresh drinking water to public it has always been problem when since Pakistan came into being now it is the duty of present government to arranged and do correct the supply system of fresh drinking water to the people of Pakistan in cites and small villages in all their respect.

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Guidelines for body weight

Height (m)	Men (kg) Acceptable average	Men (kg) Acceptable weight range	Men (kg) Obese*	Women (kg) Acceptable average	Women (kg) Acceptable weight range	Women (kg) Obese
1.45				46.0	42-53	64
1.48				46.5	42-54	65
1.50				47.0	43-55	66
1.52				48.5	44-57	68
1.54				49.5	44-58	70
1.56				50.4	45-58	70
1.58	55.8	51-64	77	51.3	46-59	71
1.60	57.6	52-65	78	52.6	48-61	73
1.62	58.6	53-66	79	54.0	49-62	74
1.64	59.6	54-67	80	55.4	50-64	77
1.66	60.6	55-69	83	56.8	51-65	78
1.68	61.7	56-71	85	58.1	52-66	79
1.70	63.5	58-73	88	60.0	53-67	80
1.72	65.0	59-74	89	61.3	55-69	83
1.74	66.5	60-75	90	62.6	56-70	84
1.76	68.0	62-77	92	64.0	58-72	86
1.78	69.4	64-79	95	65.3	59-74	89
1.80	71.0	65-80	96			
1.82	72.6	66-82	98			
1.84	74.2	67-84	101			
1.86	75.8	69-86	103			
1.88	77.6	71-88	106			
1.90	79.3	73-90	108			
1.92	81.0	75-93	112			
Body mass index†	22.0	20.1-25.0	30.0	20.8	18.7-23.8	28.6

* Value and above for all entries.
† Body mass index = weight (kg)/height^2(M).

Values given are weights without clothes.

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BALANCED DIET, HEALTHY LIFE
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Diabetic Diet

In order to keep a balance between the amount of insulin you take and the amount of food your body uses, you must eat all of the food planned for each meal and each nourishment. The Dietitian will adjust the meal plan to the type of insulin you are using and to your usual eating habits. You may vary the foods you eat at any meal by choosing within each group allowed, but serious consequences will result if you do not eat all of the food intended for each meal.

You can eat many foods which are not set forth in the Exchange Lists if you know the amount of ingredients used. As an example you may have gravy on meat if you count the flour and fat as Bread and Fat Exchanges. Mixed dishes such as Macaroni and Cheese, may be made of measured ingredients so that a known number of Milk, Bread and Meat Exchanges are used in your portion. With a little practice in trading items within groups you will be able to eat a wide variety of foods.

At first you should measure each item you eat to be sure of the amount. After a short while you will be able to judge amounts accurately. If you have difficulty controlling the insulin - food balance, weigh and measure all foods until good control is achieved.

Sugar and sweets are not included in this diet. Sugar does not give you vitamins or minerals, it just contains carbohydrates. Sugar, jelly, honey, etc., are absorbed into the blood very quickly and can cause difficulty in insulin control. Many excellent substitutes for sugar are available and can be used for all sweetening purposes. After you have followed this diet for a few weeks, you will not enjoy foods which have been highly sweetened.

When eating in restaurants, order foods which are simply prepared, such as roast meat, plain vegetables, and fresh fruit, and estimate the amount to eat in accordance with your diet pattern for that meal. Request that gravies, dressings, and syrups be omitted from your portion.

Your diet has been adjusted by the Dietitian in accordance with your Doctor's order. The amount of particular groups of food to eat during each meal period has been indicated on the menu breakdown. Be sure to eat all the food indicated for each meal.

The pattern for meals is given on the next page. You may choose from any item, from each group listed for a meal. Your insulin balance will be maintained better if you eat meals at regular intervals.

جلد از جلد دبلا ہونے
کے چکر میں سخت قسم
کی ورزش اور ڈائیٹنگ
نقصان دہ ہو سکتی ہے

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Under the Guidance of American Dietetic Association (ADA), USA
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Fast Food Picks and Pans

Report Highlights the Good, Bad, and the Ugly On the Menu

Healthy choices at fast-food restaurants are getting easier to find, but a new report shows the devil may lurk in the deals.

The study from the Center for Science in the Public Interest (CSPI) shows fast-food restaurants may be finding new ways to provide lower-fat, more nutritious options, but it's still much too easy to eat more than an entire day's worth of fat and calories in a value meal.

CSPI, whose previous reports raised eyebrows about the hidden fat and calories in movie popcorn, Chinese food, and Mexican foods, surveyed current offerings at popular fast-food establishments and picked the five best and worst options for diners.

In the "Best" category, new menu items based on fresh, low-fat ingredients got raves for both taste and convenience. The top 5 picks were:

- Wendy's Mandarin Chicken Salad
- Burger King Chicken Whopper Jr.
- Subway's Low-Fat Subs
- McDonald's Fruit 'n Yogurt Parfait
- Burger King BK Veggie Burger

"The major fast-food chains are responding to consumer demand by adding foods that are both good for you and delicious," says Jayne Hurley, CSPI senior nutritionist, in a news release. "Fast-food salads like Wendy's are replacing boring iceberg lettuce with more interesting salads that don't taste like diet food."

Although Burger King garnered praise for two of its healthy menu items, it also swept the "Worst" category with the following items:

- Double Whopper with Cheese
- French Fries
- Old Fashioned Ice Cream Shake
- Hash Browns
- Burger King Value Meals

Researchers say the chain has the most fattening hamburgers and french fries in the industry and a Burger King Double Whopper Value meal packs up to 2,100 calories, which is more than the total recommended daily calorie intake for most people.

Registered dietitian Joan Carter says it's time to re-evaluate where the value is when it comes to making healthy food choices. She says value meals and super-sized portions are merely marketing tools and not designed to maximize nutritional value.

Although pointing out dietary danger zones with reports like this is helpful, Carter says it's more important to develop a healthy relationship with food.

"Labeling food as good and bad just feeds into this love-hate relationship that gives food too much power," says Carter, who is also a spokeswoman for the American Dietetic Association.

"Food should be about giving joy and reinforcing connections with people, your ethnicity, and the joys of table," Carter tells. "Eating through a drive thru is not fulfilling what food is supposed to do."

The Safest Way to Defrost Meat and Meat Products

Food safety experts recommend thawing foods in the refrigerator or the microwave oven or putting the package in a water-tight plastic bag submerged in cold water and changing the water every30 minutes. Changing the water ensures that the food is kept cold, an important factor for slowing bacterial growth that may occur on the outer thawed portions while the inner areas are still thawing.

When micro waving, follow package directions. Leave about 2 inches (about 5 centimeters) between the food and the inside surface of the microwave to allow heat to circulate. Smaller items will defrost more evenly than larger pieces of food. Foods defrosted in the microwave oven should be cooked immediately after thawing.

Do not thaw meat, poultry and fish products on the counter or in the sink without cold water; bacteria can multiply rapidly at room temperature.

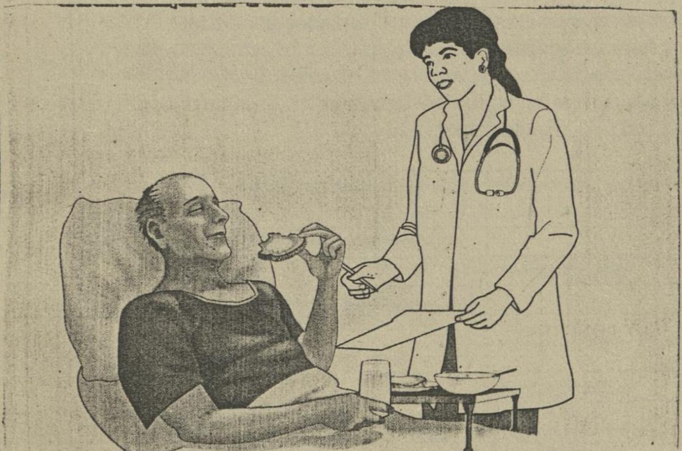
Diabetes and your diet – The common misconceptions

Because diabetes is often referred to as a sugar disease, many people mistakenly think that it is caused by eating too much refined sugar. While it is true that sugar and other simple carbohydrates can produce a rapid rise in blood glucose in the absence of adequate insulin, they do not cause diabetes. Another common myth holds that a diabetic person cannot include sugar in his or her diet. So long as there is adequate insulin to metabolize it, a person with diabetes can have modest amounts of sugar.

Although diet plays an integral role in the treatment of diabetes, there is no master diabetes diet that works for all persons with the disease. As more has been learned about effective self-management of diabetes, many of the former dietary restrictions have become more relaxed. For example, people with diabetes now routinely measure their own blood glucose and can very quickly determine the effects of specific insulin dosages, foods, exercise, stress, infections, and other factors. With proper instruction and understanding, diabetic patients can use glucose self-monitoring to adjust insulin dosages according to food intake or other factors that affect blood glucose.

Physicians and diabetes educators who use this system find that their patients often are more successful in achieving good diabetes control than are patients who are given a specific insulin regimen and a rigid dietary plan. There are a number of reasons for this: Diabetes varies considerably from patient to patient, and for any individual, the disease can even vary from day to day. (For example, a person's insulin requirements may increase during a cold or other illness, and decrease during periods of vigorous exercise.) A standardized meal also does not take into consideration individual food preferences and deep-seated cultural attitudes and traditions - both very important aspects in designing a meal plan. Trying to work with exchange lists is impractical or too complicated for many patients. Expecting an adolescent to adhere to a diet that is markedly different from that of his or her peers may be unrealistic.

In the past, there has been a tendency to blame the patient for not adhering to diet plans, with little consideration as to whether the diet was tailored to meet individual needs. Today, there is increased emphasis on patient education and understanding. Many diabetes specialists enlist the services of a dietitian or diabetes educator to work with the patient (and his or her family, if appropriate) in developing a sound and practical eating plan. As both the general public and physicians become increasingly attuned to the role of a moderate, balanced diet in maintaining overall health, we have come to recognize that the dietary principles recommended for diabetic people are very much in keeping with what all of us should be eating. Thus, it is no longer considered necessary to prepare separate dishes or meals for the diabetic family members.



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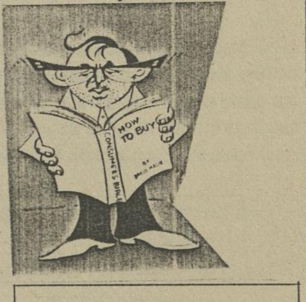

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Bulletin of
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Vol. 5 No. 3 May 2002

THE ESSENTIALITY OF LINOLEIC ACID AND ALPHA-LINOLENIC ACID DURING PREGNANCY

Besides being a major energy source and a carrier of fat soluble vitamins, fat is the supplier of essential fatty acids. This last function is especially important for young infants. During the past decade the awareness of the nutritional importance of along chain polyunsaturated fatty acids has increased considerably.

Essential Fatty Acids

The typical characteristic of polyunsaturated fatty acids (PUFAs) is their chain like structure of carbon atoms which are linked with several double bonds. Dependent on the situation of the double bonds, PUFAs are divided into two families: omega-3 and omega-6. Since the body is not able to produce those fatty acids, the parent fatty acids of these two families, linoleic acid and alpha-linolenic acid are considered as "essential fatty acids". Description of their names is given as below:

UFAs	Poly unsaturated fatty acids
LA	Linoleic acid
ALA	alpha-Linolenic acid
LCPUFAs	Long chain poly unsaturated fatty acids
AA	Arachidonic acid
DHA	Docosahexaenoic acid

Metabolism of PUFAs

Llinoleic acid and alpha-Linolenic acid are de-saturatred (forming extra double bonds) and elongated (adding carbon-atoms) (1). The two metabolic pathways of these two fatty acids are not integrated, but they do compete for the same enzyme system that allows for their further de-saturation and chain elongation (as shown below). This suggests that the absolute amount of the essential fatty acids as well as their saturation have impact on the ability to synthesize their longer chain derivates arachidonic acid (AA), and docosahexaenoic acid (DHA).

omega-6-family		omega-3 Family
Linoleic acid C18 : 2omega6 (LA)		alpha-linolenic acid C18 : 4omega3
	-6desaturation	
Alpha-linolenic acid C18 : 3omega6		Stearidonic acid C18 : 4omega3
	elongation	
Dihomo-y-linolenic acid 20 : 3omega6		Dihomostearidonic acid C20 : 4omega3
	-5-desaturation	
Arachidonic acid C20 : 4omega6		Eicosapentaenoic acid C20 : 5omega3
	elongation	
Doscosatetraenoic acid C22 : 4omega6		Doscosapentaenoic acid C22 : 5omega3
	-4-desaturation	
Doscosapentaenoic acid C22 : 5omega3		Docosahexaenoic acid C22 : 5omega3

The Nutritional Importance of AA and DHA

AA and DHA are found in high proportions in the structural lipids of cell membranes, particularly those of the central nervous system and retinal photo receptors and serve as precursors for the synthesis of eicosanoids (2). Available data show that a good AA-and DHA-status of an infant is of importance for growth and the development of the brain and is positively related to the visual acuity of infants (3).

Long Chain PUFA's	Arachidonic acid (AA)	Docosahexaenoic acid (DHA)
Function	• Growth • Brain development	• Brain development • Eye development

Current Developments

In uterus, DHA and AA seem to be transferred preferentially from the mother to the fetus by the placenta (1). After birth, breastfed infants receive pre-formed dietary AA and DHA with human milk. Research has shown that pre-term infants may need dietary AA and DHA, since their de-saturated enzyme system is insufficient (4). The term infant seems to be able to synthesize AA and DHA out of LA and ALA. However, research is going on to make it clear whether a full term infant would benefit from AA and DHA supplementation to an infant formula. Certainly infant formulas should contain optimal amounts of linoleic acid and alpha-linolenic acid in the correct ratio.

Requirements during Infancy

The ESPGAN recommendations for linoleic acid for full term infants are 4.5-10.8% of total energy. Their recommendation for a-linolenic acid is based on levels found in human milk : 0.5% of total energy. For the ESPGAN committee the dietary ratio of linoleic to alpha-linoleic acid is much more important because of the competition of the two fatty acids for the same enzyme system. The ESPGAN recommends a linoleic : alpha-linolenic acid ration between 5:1 and 15:1 (5).

Nutrilon premium contains 0.6g linoleic acid (8.2% of total energy) and 0.06 g alpha-linolenic acid (0.82% of total energy) per 100 ml which form a ration 10:1. This ration supports healthy growth and development, in particular brain development and visual acuity.

Important Notice

Breast feeding is the best source of infant nutrition. Good maternal nutrition is important for preparation and maintenance of breast feeding. When infant formula is to be used, a mother should be aware of the financial and social implications of formula feedings, the difficulty of reversing the decision not to breast feed, and the care that must be taken to prevent partial formula feeding from interfering with lactation.

Summary

Linoleic acid and alpha-linoleic acid are essential fatty acids. Availability of their derivates AA and DHA is essential for early human growth and development. Therefore an infant formula should contain the essential fatty acids in sufficient amounts and in the correct ratio.

Chief Editor, Dr. Sultan Mahmood (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com. Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

Bulletin of
First DietCare Center

Vol. 5 No. 4 June 2002

Preventing and controlling micronutrient malnutrition through food-based actions in South Asian countries[1]

Worldwide, the largest numbers of people suffering from micronutrient malnutrition live in South Asia. Micronutrient malnutrition, especially vitamin A deficiency (VAD), iodine deficiency disorders (IDD) and iron deficiency anaemia (IDA) are serious public health problems in these countries. It is estimated that about 123 million people in Southeast Asia are at risk of vitamin A deficiency and 1.7 million are affected by xerophthalmia; 486 million are at risk of iodine deficiency and 176 million are affected by goitre; and 616 million are affected by iron deficiency or anaemia (FAO, 1997). The situation in the region is thus grave and unacceptable considering that there are methods available to address these problems effectively.

Of the four methods available for the control of micronutrient malnutrition – diet diversification, food fortification, medicinal supplements and disease control – the first two are food based. Many of the current programmes for the prevention and control of micronutrient malnutrition in the countries of the South Asian Association for Regional Cooperation (SAARC) rely too heavily on health interventions and are not fully exploiting the potential of more sustainable food-based actions. There is now a strong realization that action is urgently needed to promote and strengthen food-based actions for the prevention and control of these deficiencies. The departments of agriculture in SAARC countries, together with other departments such as those concerned with trade and industry and with education, should play a vital part in promoting and implementing these actions along with those of the health sector.

The Food and Nutrition Division of FAO, in collaboration with the International Life Sciences Institute (ILSI), has produced a manual on food-based strategies to prevent micronutrient malnutrition (FAO and ILSI, 1997). It has also developed a popular manual entitled *Improving nutrition through home gardening* (FAO, 1995). Both of these manuals advocate and promote food-based actions as sustainable and self-reliant ways of preventing micronutrient malnutrition. The manuals have been used in workshops and seminars to identify specific food-based actions to complement ongoing health activities. These actions should be promoted as the most sustainable method of preventing micronutrient malnutrition in the various regions of the world. Since the highest concentration of people with micronutrient malnutrition is in the SAARC countries, it was thought appropriate to start the promotional activities there.

WORKSHOP ON PREVENTION AND CONTROL OF MICRONUTRIENT MALNUTRITION

As a follow-up to the International Conference on Nutrition and the World Food Summit, the Workshop on Prevention and Control of Micronutrient Malnutrition Through Food-Based Actions in the SAARC Countries was held in Dhaka, Bangladesh from 17 to 20 November 1997. The conference was sponsored by FAO in collaboration with the Thrasher Research Fund and the Micronutrient Initiative and organized by the Bangladesh Agricultural Research Council. Official delegates from Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka participated, along with representatives of national and international agencies, non-governmental organizations (NGOs) and institutions. The workshop was inaugurated by the Minister for Agriculture and Food of Bangladesh, Matia Chowdhury. Dr C. Gopalan, President of the Nutrition Foundation of India, delivered the keynote address.

Objectives

The workshop participants reviewed the various components of food-based actions and exchanged information on current programmes for the control of micronutrient malnutrition. They suggested ways and means of harmonizing ongoing programmes in other sectors (particularly in health and education) with food-based actions. The lessons learned from and cooked, should be determined, with special emphasis on identifying micronutrient-rich traditional foods.

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[1] Adapted from the report of the Workshop on Prevention and Control of Micronutrient Malnutrition Through Food-Based Actions in the SAARC Countries. Dhaka, Bangladesh, 17-20 November 1997.

- Institutions within the region that could provide training on various aspects of the problem of micronutrient malnutrition should be identified, and collaboration among institutions within the SAARC countries should be organized for exchange of staff for training in specialized fields.
- Each country should support and promote more initiatives to increase home-level production of micronutrient-rich fruits and vegetables, small animals and fish by the target groups and should support the development of marketing outlets for the sale of surplus production by the target households.
- Home gardening should be promoted more extensively. Efforts should be made to select fruits and vegetables rich in micronutrients. Target populations should have access to high-yielding seeds and other inputs. Governments should support the development of local infrastructure in order to promote home gardening.
- Processing of fruits and vegetables should be encouraged to add value to these products. Simple processing technologies should be adapted to enable women to earn extra income, thus improving their ability to purchase other micronutrient-rich foods. Processing would make it possible to use some of the surplus during the lean season.
- Governments should promote pre- and postharvest technologies and methods to prevent wastage of fruits and vegetables and should provide adequate transportation and marketing outlets for the sale of produce.
- Nutrition education should be an integral part of all nutrition improvement programmes. An integrated and coordinated approach should be employed in the development of nutrition education messages for the public to avoid creating confusion. All available media and methods should be used and messages should be addressed to all target groups – primary, secondary and tertiary – to create a nutrition movement in each country. National universities and institutions should be involved in innovative research, and adverse propaganda by vested interest groups should be neutralized. Dissemination of authentic information collected through systematic scientific studies should be encouraged.
- A directory of institutions working in nutrition in the region should be prepared, and national capacity building – particularly for universities and national institutions of research and information, education and communication (IEC) activities – should be enhanced.
- Training of trainers on IEC techniques and methodologies should be organized in reputable institutions in the SAARC region.
- Nutrition education should be introduced in school curricula as an integral part of instruction.
- The current programme of iron and folate tablet distribution should include deworming and should encourage the regular consumption of citrus fruits to help absorb iron.
- Food-based dietary guidelines should be prepared by all SAARC countries and should encourage the consumption of micronutrient-rich foods, particularly fruits and vegetables.
- All ongoing food-based programmes in SAARC countries should be continuously monitored and kept under surveillance. Success stories should be disseminated for adoption in other countries.
- Fortification of food commonly consumed by the people should be encouraged. Steps should be taken to keep the price of the fortified food within the purchasing capacity of the target groups.
- A regulatory body to enforce quality control of fortified food should be established to prevent fraudulent practices and to protect consumers.
- A subregional network on food-based actions for prevention and control of micronutrient malnutrition should be established to exchange information and technology among the countries. FAO was asked to consider this as a top priority for funding.
- Subregional workshops should be held every one or two years to assess progress in food-based actions in SAARC countries. FAO was asked to seek collaboration with donors for the holding of such workshops.
- A regional consultation on existing, promising or adaptable technologies in the field of food processing and food fortification should be organized in the near future. ◆

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Bulletin of
First DietCare Center

Vol. 5 No. 5 July 2002 Page 17

Tips for the control of diabetes with sensible diets

1. Eat a variety of foods. Eating a variety of foods is a way of ensuring your sufficient micro*nutrients intake*

2. Maintain reasonable body weight. Be careful of portion control. Daily activities should be increased. Meals should be eaten at about the same time of the day and not be skipped

3. Avoid taking sugars, particularly direct sugars. Mind that carbohydrates convert in sugars (glucose) in the body. Consider following:

   - Eat smaller severing of the starches. Select vegetables and fruits more often which are high in fiber Do not peel off *most fruits (e.g., apples) and vegetables* (e.g., potatoes)

   - Avoid added sugars with natural foods, e.g., with yogurt, milk, etc. Take sugar less tea and coffee

   - Avoid bakery foods. Avoid adding cream on cakes and biscuits

   - Eat fewer low – calorie foods, such as vegetables, salads, skimmed milk, fruits with more water content, etc.

   - Avoid drinking sodas and pure juices particularly with added sugars
   - Avoid taking fruits with regular meals

4. Avoid too much fat, particularly saturated fat and cholesterol. Consider following:

   - Eat smaller severing of the meat. Select fish and poultry more often. Choose lean cuts of red meat

   - Prepare meat by roasting, broiling, and baking. Trim all fat off before cooking

   - Avoid added sausages and gravies. Remove skin from poultry

   - Drink skim or one percent milk and products made from this milk

5. Avoid too much sodium and salt.

   - Reduce the amount of salt used in cooking

   - Do not add salt at the plate

   - Eat fewer high-salt, high sodium foods, such as canned and processed foods

6. Eat foods with starch and fiber

   - Choose dried beans, peas and lentil more often

   - Eat whole grain cereals, breads, crackers, brown rice, oat bran, etc.

   - Eat more vegetables (raw and cooked) and fresh fruits (eat skins if possible)

   - Eat less sugar by avoiding regular soft *drinks, table sugar,* honey, syrups, jams, jellies, candies, sweet rolls, cakes particularly cream cakes, regular gelatin, etc. Use *artificial sweetener, if needed,* in place of caloric sweetener

7. Avoid eating out

8. Take small but regular meals instead of two big meals. Four major meals and three snacks are recommended

9. Less starch, fats and more proteins and fibers are recommended

Oct 2002

LEAVE MEDICINES AND EAT HEALTHY DIET

Obesity is a health risks and yield a lot of undesirable effects on various parts of human body. For instance, it may promote following diseases:

Brain	Paralysis
Heart	Heart attack, heart failure, blood pressure
Lungs	Suffocation, forced breathing, fast breathing
Stomach	Weakness of outer value
Chest	Congestion, burning
Gall	Stones
Skin	Mange
Bones	Rheumatism, backache
Veins	Inflammation, passive activity
Metabolic disorders	Higher level of cholesterol, higher chances of diabetes, higher level of uric acid
Carcinogens	Increasing chances of cancer in large intestine, rectum, prostate, breast, ovary, uterus, etc
General	Complications during surgery and pregnancy

If you are facing anyone of the above mentioned problems then consult your dietitian for a better, economical and efficient food plan..

In the following issues, we'll explain how a variety of food you may eat to avoid aforesaid complications. And when you eat them how they can help you to feel better and achieve good control on your body weight. We will start guiding the obese patients with background information. by looking at various food categories like carbohydrates, fats, proteins, and the "micronutrients" such as vitamins and minerals. Then, we'll talk about how to put this information together into a good, healthy diet to reduce the chance of obesity or even overweight.

Remember:

1. Save health through food instead of medicines.
2. Change your food habit and live a healthy life which is free from physicians.
3. Be aware that you consume less food otherwise more food would consume you.
4. The death rate in overfed people is more than the underfed.

Food Sources Beneficial For Health

1. High fiber sources like vegetables, beans. pulses and grams.
2. Bran or hulled grains, i.e., crushed wheat.
3. Champati made from un-sieved flour.
4. Diet fruits (less sweet), i.e., melon, water-melon, guava, etc.
5. Whole or unpeeled fruits instead of fruit juices.

Do and Do Not's

1. Do not paste jam or honey on bread slices Use diet jam, etc.
2. Do not use sweet corn flakes. Use simple ones.
3. Do not mix sugar in tea or coffee. Use low caloric sugars.
4. Do not use tin-pack fruits. Use fresh fruits.
5. Do not drink colas, squash, juice, Take simple water, mineral water, lussi, diet drinks.
6. Do not eat sweet dishes after meals, i.e., sweet, ice-cream, chocolate, cake, custard, etc. Take fresh fruits, diet jelly, etc.
7. Do not dry fruits, i.e., almond, pistachio, etc. Take fresh fruits.
8. Do not take mayonnaise, cheese, tomato ketchup.
9. Do not take high fate milk. Take skimmed milk and also mix the same in tea

General

1. Ghee and oils have equal amount of calories. Try to use fat sources as minimum as possible.
2. Better to cook food in steam.
3. Replace red meat with white meat, i.e., mutton and beef with broiler and fish.
4. Remove fat from beef and mutton.
5. Replace toasting with boiling

Bulletin of
First DietCare Center

Vol. 5 No. 6

Page 21

August 2002

Natural Food Protectors against Cancers

It is estimated and widely accepted that 60 percent of all women's cancers and 40 percent of men's cancers are related to nutritional factors alone. For a number of years researchers, prompted by epidemiological evidence in the world, have begun to study the importance of foods that can enhance our health. Although the research is still in progress and none of the findings are conclusive, and it is known that any substance can be toxic when taken in excess. The following are among the most studied foods today showing to compose natural food protectors against many cancers:

S. No.	Natural Food Protectors	Constituents of Foods	Protective Action
1	Carotene	Carrots, potatoes, yams, pumpkins, squash	Neutralizes free radicals and singlet oxygen radicals; enhances immune system; reserves pre-cancer conditions; high intake associated with low cancer rate
2	Indoles	Cabbage family, i.e., cabbage, cauliflower, mustard green, etc.	Destroy estrogen, known to initiate new cancers, especially breast cancer
3	*Isoflavins*	*Legumes, i.e., beans,* peas, peanuts, etc.	*Inhibits estrogen receptor; destroys* cancer gene enzymes; Inhibits estrogen
4	Lignans	Flaxseed, walnut, fatty fish	Inhibits estrogen action; inhibits prostaglandin and other hormones causing cancer spreads
5	Polyacetylene	Parsley	Inhibits prostaglandins; destroys benzopyrene which is potent carcinogen Destroys enzymes that cause cancer to spread
6	Protease inhibitors	Soybeans	Destroys enzymes that can cause cancer to spread
7	Steroles	Cucumbers	Decreases cholesterols
8	Sulfur	Garlic	Inhibits carcinogens; inhibits cancer *speed; decreases cholesterol*
9	*Terpenes*	*Citrus fruit*	Increases enzymes to break down carcinogens; decreases cholesterol

The enlisted foods are mostly vegetables, beans and fruits. It may be guessed that meats and other animal foods are more susceptible for cancers. Anyhow, try to have four to five servings of vegetables, fruits and beans per day to avoid the risks of cancers.

FDC Vol.5 No.6 (24) Aug2002 Bulletin

WEEKLY FOOD MENU

Standard weekly diet chart averaging 1200 cal to 1400 cal per day which with moderate activity and 20 minute walk can give a healthy living to average built & over weight patients. In diabetic patients it brings blood sugar levels within normal range appropriately adjusted with anti-diabetic treatment.

Days	(160 Cal) Breakfast	(140 Cal) Mid-Morning	(350 Cal) Lunch	(60 Cal) Tea	(400 Cal) Dinner
Sat	1 Boiled Egg (with out Yolk) 1 $\frac{1}{2}$ Slice + 1 Cup Tea (Without Sugar)	One Veg. Sandwich + 1 Cup Tea OR 1/2 Glucerna can	1 Plate Boiled Rice + Veg/Meat Poultry With Salad	Grape Fruit Juice OR 1 Cup Tea	1 Chappatti + Veg/Meat/ Chicken + Glucerna $\frac{1}{2}$ Can at bed time
Sun	1 Boiled Egg (with out Yolk) 1 $\frac{1}{2}$ Slice + 1 Cup Tea	2 Biscuits (Salty) 1 Cup Tea OR 1 Cup Glucerna	1 $\frac{1}{2}$ Chappatti + Salad + Veg/Fried Fish	1 Biscuit (Salty) +1 Cup Tea	1 Plate rice/Veg OR Gravy
Mon	1 Boiled Egg (with out Yolk) 1 $\frac{1}{2}$ Slice + 1 Cup Tea (Without Sugar)	One Veg. Sandwich + One Cup Tea	1 Chappatti + Salad + Veg/Meat	1 Biscuit (Wheat) + 1 Cup Tea	1 Chappatti + Veg/1 Cup Glucotrol at bed time
Tues	1 Boiled Egg (with out Yolk) 2 Rusk + 1 Cup Tea (Without Sugar)	2 Biscuits (Salty) 1 Cup Tea OR One Cup Glucerna	1 Chappatti + Salad + Veg/Meat or Fish + $\frac{1}{2}$ Piece Apple	1 Biscuit /Rusk + 1 Cup Tea	3/4 Plate Chinese rice OR Onion Fried rice
Wed	1 Boiled Egg (with out Yolk) 2 Rusk (Without Sugar)	Grape Fruit Juice 1 Glass	1 $\frac{1}{2}$ Chappatti + Salad Veg/Meat	1 Biscuit (Salty) + 1 Cup Tea	1 Chappatti Veg/Chicken Grilled
Thru	1 Boiled Egg (with out Yolk) Daliya 1 Plate/ Vermicelli $\frac{1}{2}$ Plate, Sweetened with Canderal + 1 Cup Tea	$\frac{1}{2}$ Banana/Apple/ $\frac{1}{2}$ Kinno	1 $\frac{1}{2}$ Chappatti + Salad Veg/Meat or Fried Fish	1 Biscuit (Plain) + One Cup Tea	1 Chappatti Veg/1 Cup Glucotrol at bed time
Fri	1 Boiled Egg (with out Yolk) 1 Chappati with Veg or Egg Fried/ Omalate without Yolk + 1 Cup Tea	One Salad Sandwich with Cheese + 1 Cup Tea	1 Plate Boiled rice + Veg/Meat Poultry	1 Biscuit/Rusk + One Cup Tea	1 Chappatti + Veg/ Chicken Gravy

Note:- Canderal, Aspartame or equal can be used as Sweetening Agents. Diet 7 - UPS or Diet Cola can be taken occasionally in hot weather. Ice-cream without Sugar is also available in Lahore.

BALANCED DIET. HEALTHY LIFE

First Dietcare Centre
BULLETIN

Vol. 5 No. 7
September 2002

TopTen LISTS

The Top 10 Facts About High Blood Pressure & the Natural Healing Process

Category: Health, Well-Being,Self-Care, Diet, Balance, Eating (BF1)

Originally Submitted on 8/28/96.

Do you suffer from high blood pressure? Also, termed hypertension, many people are not even aware of its presence and dangers. Here are ten things you may want to know.

1. High blood pressure is not a disease!

It is the body's defensive and corrective measure,initiated to cope with pathological conditions in various functions of the body. such as general toxemia, impaired kidney function, glandular distrubances, defecive calcium metabolism, degenerative changes in arteries (artheriosclerosis, atherosclerosis), overweight, emotionally caused dysfunction in vaso-motor mechanism.etc. When the arteries become obstructed with plaque and cholesterol, they harden and constrict with arteriosclerosis, and the circulation of blood through the vessels becomes difficult, forcing the blood through narrower passageways. As a result, blood pressure becomes elevated.

2. Hypertension is precipitated by a number of factors.

In addition to arteriosclerosis, hypertension is often precipitated by cigarette smoking. stress, obesity, excessive use of stimulants such as coffee or tea, drug abuse. high sodium intake, and the use of contraceptives.

3. A normal blood pressure reads 120 over 80 (120/80)

Normal blood pressure readings can vary from 100/70 to 140/90. While readings of 140/90 to 160/90 or 160/95 indicate borderline hypertension, any reading over 180/115 is severely elevated.

4. People with a family history of hypertension may be more likely to suffer from high blood pressure.

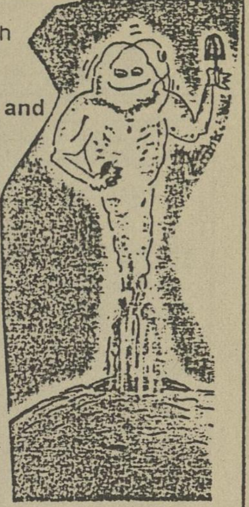
5. Hypertension is often asymptomatic.

Advanced warning signs include headaches. sweating, a rapid pulse, shortness of breath, dizziness, and vision disturbances Because hypertension often shows no signs, having your blood pressure

69

FDC Vol.5 No.7 (28) Sep 2002 Bulletin

checked regularly is important, especially for those individuals in high risk categories.



6. It is important to eliminate the reason for elevated blood pressure and not just treat the symptoms.

The objective of the biologically oriented doctor (one who treats disease through the natural healing process) is not to lower blood pressure with drugs or even with specific foods or vitamins, but to eliminate the reason for the elevation, i.e., to remove the causes of the condition. When these are removed, the blood pressure will go down by itself.

7. High blood pressure can be of emotional origin.

It can be caused by stress, worries, fear, pressures competitive life, or prolonged nervous stress. These underlying causes of emotional origins must be removed before any nutritional or biological treatments can be successful.

8. A salt-free diet is essential for lowering blood pressure.

Lowering your salt intake alone is not enough. You must eliminate all salt from your diet! You can do this by carefully reading all labels from processed foods and avoiding those that have the words, "soda", "sodium", or the symbol. "Na" on the label. These indicate that the product contains salt. Some foods and food additives that should be avoided on a low-salt diet include: Accent flavor-enhancer (monosodium glutamate); baking soda: canned vegetables; commercially prepared foods; certain dentifrices and over-the-counter medicines that contain ibuprofen, such as Advil and Nuprin; diet soft drinks; food with mold inhibitors, preservatives, and most sugar substitutes; meat tenderizers; softened water; and soy sauces. These products can cause cells to swell and interfere with the effectiveness of diuretics used in the treatment of hypertension.

9. A high fiber diet is recommended.

A high fiber diet and supplemental fiber including seeded foods like brown rice, buckwheat, millet and oats are recommended along with plenty of raw fresh fruits and vegetables, such as apples, asparagus, bananas, broccoli, cabbage, raisins, squash, and sweet potatoes. Eat small meals and do not overeat. Remember, obessity is one of the main causes of high blood pressure and heart disease.

10. Avoid foods that are high in fat and cholesterol.

Foods such as aged meats and cheeses, anchovies, avocados, chicken liver, chocolate, fava beans, pickled herring, sour cream, sherry and wine, yogurt, bacon, corned beef, pork sausage, smoked or processed meats, gravies and bouillons. Eat only white fish and skinless turkey or chicken.

First Dietcare Centre

Under the Guidance of American Dietetic Association (ADA), USA

Chief Editor, Dr. **Sultan Mahmood** (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center, 183-A New Chouburji Park, Lahore 54500. Tel. 042 746 84[illegible]. Email: smfaq@hotmail.com. Published regularly on first Monday of every month since 15 June 1997 except July 2000 to Feb 2002 when Chief Editor was abroad. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however understood that recommendations contained in bulletin are not alternative of medical advice.

Bulletin of
First DietCare Center

Vol. 5 No. 8 October 2002 Page 29

VIAGRA can restore life's most pleasurable activity

Successful management of ED with VIAGRA is associated with gains in psychological well-being.

Although erectile dysfunction [ED] was once thought to be a normal part of aging, we now know that it is not. Millions of younger men have ED. And although some men may seem too young to have it, ED affects nearly 40% of 40-year-old men. And, about half of all men older than 40 years have ED. It is important to ask every mature man about his sexual function since ED is often associated with common lifestyle factors or choices such as stress, smoking, or alcohol abuse.

A physical examination may also aid in the identification and treatment of other serious medical conditions associated with erectile dysfunction, including high blood pressure, diabetes, and vascular conditions, because it is often a warning sign for these conditions.

A new era has begun in the medical management of erectile dysfunction. Important research on the cellular mechanisms of erection has led to significant pharmacologic and therapeutic breakthroughs. New oral medications, such as Viagra, offer effective, well-tolerated treatment and suggest far-reaching changes in the process of care and clinical practice patterns in the field of sexual dysfunction.

Since it became available in April 1998, Viagra has become the most widely used treatment for erectile dysfunction. As of June 2001, it has been prescribed more than 500 million times to more than 100 million men by more than 2 million physicians. In fact, 100 Viagra tablets are dispensed every second around the world.

Viagra (sildenafil citrate) is the most extensively studied and widely used treatment for ED. It has been thoroughly evaluated in 50 controlled clinical studies specifically designed to include more than 10000 patients representative of the general ED population. Viagra is a breakthrough, the first of a new class of orally active drugs proven effective for the treatment of ED.

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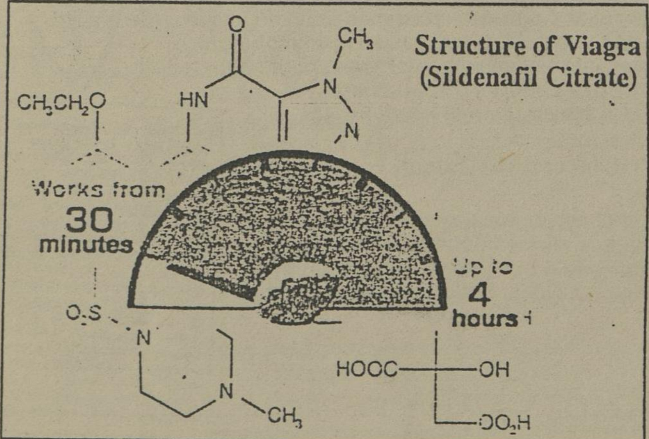


Structure of Viagra (Sildenafil Citrate)

Erectile dysfunction (ED) is the inability to achieve and maintain sufficient erection for intercourse. Although previously called impotence, erectile dysfunction is now a more appropriate term due to the negative connotations of word impotence. Penile erection and flaccid state are events that are regulated by the blood circulation to smooth muscles comprised of lacunar spaces.

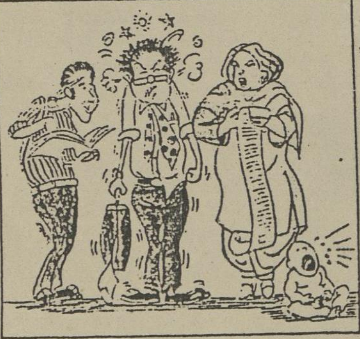
In the flaccid state, only a minimal amount of blood flows through these lacunar spaces. In response to sexual stimulation, blood flow increases and rigid erection occurs. Flaccid state returns after orgasm.

Failure to achieve an erection may result from failure to initiate which may be associated with psychological or physical reasons; failure to fill results from inability to deliver blood because of narrow blood vessels resulting from age, diabetes mellitus, hypertension and smoking etc. failure to store is caused by an inability to hold blood because of inadequate outflow resistance. Stress or inhibition may contribute to each of these.

A majority of men do not initiate conversations with physicians regarding sexual health; 71% believe their concerns would not be recognized as medical problems, while 68% fear that discussing sexuality might be embarrassing or awkward.

Viagra indirectly helps natural chemicals which are released in response to sexual stimulation causing local smooth muscle relaxation and increased blood flow, leading to erection. Viagra has no direct muscle-relaxant effect, so it helps produce erection only when sexual stimulation is already present.

In clinical studies of patients suffering from erectile dysfunction (ED) for at least 6 months, Viagra improved erection by up to 82%. Viagra worked in 87% of men with occasional to frequent ED. It is also important to note that the vast majority of ED patients (80%) have occasional to frequent ED. In these trials, patients who are less impaired at baseline responded best to treatment. Viagra is 4 times more successful than placebo. Partner satisfaction with sexual intercourse is higher in association with Viagra than placebo, however, the use of Viagra offers no protection against sexually transmitted diseases. Viagra was shown to potentiate the hypotensive effects of nitrates, and its administration to patients who are using organic nitrates, in any form is therefore contraindicated. However, Viagra is effective and well tolerated in patients taking antihypertensive medications. In fact, more than 10% patients taking Viagra are also taking antihypertensive medications. There are no controlled clinical data on the safety and efficacy of Viagra in the following groups; caution should be used when prescribing Viagra.



VIAGRA

Viagra is contraindicated in patients with recent myocardial infraction and stroke. Treatments for erectile dysfunction, including Viagra, should not be generally used in men for whom sexual activity is inadvisable because of their underlying cardiovascular status and patients with resting hypotension or hypertension.

In clinical trials, the most common side effects of Viagra were headache (16%), flushing (10%), and dyspepsia (7%). Adverse events, including visual effects (3%), were generally transient and mild to moderate. Central nervous system effects were not commonly reported. Physicians should consider the impact of resuming sexual activity, Viagra's transient vasodilatory effects, or the combination of both on men Patients should be advised to seek immediate medical attention if an erection lasts more than 4 hours.

Viagra allows time for Intimacy prior to intercourse. The recommended dose for most patients is 50 mg taken, approximately 1 hour before sexual activity. Viagra works in as fast as 30 minutes and remains active for up to 4 hours. Viagra — works only in response to sexual stimulation while allowing time for intimacy and spontaneity. Moreover, when taken with a high-fat meal, Viagra takes longer to reach maximum plasma concentrations. Viagra should not be combined with other treatments for ED.

The recommended dosing frequency for most patients is once or twice a week. It is available in three flexible dosing strengths: 25-mg, 50-mg, and 100-mg tablets. Based on effectiveness and toleration, the dose may be increased to a maximum recommended dose of 100 mg or decreased to 25 mg. A starting dose of 25 mg of Viagra should be considered in patients over 65 years of age a patients with hepatic and renal impairment. In clinical studies, the frequency of dosing did not increase over time and there was no evidence that patients developed a tolerance to Viagra. There are factors that interfere with a successful sexual intercourse, especially after a long period of sexual inactivity like anxiety, stress, fatigue, lack of stimulation and excessive alcohol use. Therefore, it may take more time to overcome these hurdles to rekindle the sexual relationship. Physicians should counsel their patients not to get discouraged in their initial attempts to resume sexual activity.

Chief Editor, Dr. Sultan Mahmood (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly FDC Bulletin from First Dietcare Center, 183-A, New Chouburji Park, Lahore 54500. Tel. 042.745.8494 . Email: [illegible] Published regularly on first Monday of every month since 16 June 1997 except July 2000 to Feb 2002 when Chief Editor was abroad. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized, but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

BALANCED DIET, HEALTHY LIFE

First Dietcare Centre
BULLETIN

Vol 5. No. 9 November 2002 Page 33.

Rational treatment of hypertension

Hypertension is a life-long disease. Besides being effective and safe, its treatment has to be affordable as weil. This however might not be the case in majority of the prescriptions doctors are writing today. Here are views of a leading clinician explaining briefly the issue and its background.

Hypertension is a life-long disease. The important factor in successful management is persistent and adequate control of blood pressure which requires adherence to affordable drug treatment as well. Particularly, in developing world for a life-long treatment, the cost of drug becomes very important factor and it can not be ignored.

The Joint National Committee of the United States of America (USA) recommended low thiazide diuretics and beta-blockers as the initial agents of choice for the treatment of hypertension based on their proven value, low long term adverse effects profile and low cost i.e. affordability. These features fulfill the criteria of rational therapeutics and the concept of essential drugs. The recommendation of initial therapy with low-dose thiazide diuretics or beta-blockers is supported by consensus in United Kingdom (UK), with strong endorsement in the British National Formulary. These recommendations have also been supported by experts all over the world and the scientific societies of European Union, Australia, Newzealand and Canada.

The only glaring exceptions have been the World Health Organization (WHO)'s panel of hypertension and International League against Hypertension which advised that any of the four categories of anti-hypertension agents should be suitable for initial therapy i.e. low dose diuretics, beta-blockers, calcium antagonists and alpha blockers. The recommendations of the latter panels were severely criticized and they were accused of serving vested interests because they ignored the advantage of low dose diuretics and beta-blockers and particularly the cost-effectiveness.

Later on, the International League against Hypertension dropped recommendations on the use of alpha-blockers as a first line drug stating that it was inferior to other groups of drugs in preventing long term complications. In recent recommendations, the international league no longer recommends the use of calcium antagonists as first line anti-hypertension drugs. However, the league continues to recommend ACE inhibitors along with thiazide and beta-blockers as first line drugs for the treatment of hypertension. It ignores the cost factor. The factor of cost-effectiveness (affordability) is not ignored even in the developed countries, hence the developing countries, which suffer so much from lack of resources, need more to address and view it in proper background. These countries would loose more if they ignore cost-effectiveness. The WHO and the international league have to keep in mind the interest of millions of people who are still living below the poverty line. Therefore, logic dictates that thiazides and beta-blockers should be the first line drugs for general treatment of hypertension unless these are contraindicated or not tolerated. No doubt, ACE inhibitors are important drugs and essential for special situations like left ventricular dysfunction and certain nephropathics. Similarly calcium antagonists and alpha blockers have useful roles in the management of certain cases of ischaemic heart disease and prostate hyperplasia respectively.

Unfortunately, cost-effective thiazides bendroflumethiazide and hydroclorthiazide which are included in the WHO and National Essential Drug List of Pakistan, are not available to the people of Pakistan. It is constitutional and moral duty of the authorities to make these life-saving drugs available to poor people of this country, preferably at no cost in government hospitals or at least in the local drug market.

The other useful drugs for cost-effective treatment of the populations of poor countries are reserpine in low dosage and its combination with low dose thiazides and also methyle-dopa which is safe even in pregnancy.

Paradoxically, the market is flooded with irrational and expensive drugs harming the basic interest of the people at large as well as the State. It is pity that no action has been taken to control their availability for the last several years, despite the persistent representations made to the concerned authorities. The government should take serious note of the situation and make essential life-saving drugs available. It is the prime responsibility of the government to enhance peoples' access to the needed life-saving drugs. ■

FDC Vol. 5. No. 9 November 2002 Page 36 Bulletin.

BREAST FEEDING

("Mother shall suckle their children for two whole years; (that is) for those who wish to complete the Suckling." Sura Baqara (The Cow), revealed at Madina. Verse: 233. Para.2)

Background:

Breast feeding is not only species specific but also specific for that infant. Every mother's milk is specific for her infant. Immunoglobulin A is of different types in different mothers. The composition of the breast milk changes in case of preterm babies. The protein content increases from 1.5% (normal) and goes upto2%. The mineral content of breast milk changes when the infant is suffering from diarrhoea. Thus breast-feeding is a way of providing ideal food for the healthy growth and development of infants and has a unique biological and emotional influence on the health of both mother and child. The prevalence and duration of the breast-feeding have declined in Pakistan for a variety of social, economic and cultural reasons.

Exclusive breast-feeding means nothing orally except mother's milk. It should be done upto 4-6 months of age.

The substitute of breast milk is nothing but the closest substitute is cow's milk, which is not available in Lahore. Mostly buffalo's milk is available in the market. The composition of cow's milk and buffalo's milk is different.

It is a common practice in our society to dilute the buffalo's milk. The dilution is done crudely and brutally. This dilution of milk seems to be one of the causes of malnutrition in our younger generation. Powder milk (formula) is similar to cow's milk. The more expensive brands are modified so that they are more like human milk but the quality of protein and fat can never equal that of breast milk, and no formula can contain anti-infectives substance. Inspite of public health education by family physicians and others, the majority of parents still wish to feed their Infants formula-milk. Yes, it is still a pride symbol. The only hindrance is the high price, not the Infant health awareness.

To illuminate (highlight) the above-mentioned problems, I conducted the following cross sectional survey in my clinic.

Method:

Parents of children from 2-5 years of age are interviewed in the clinic. The clinic is located in Lahore. The Population attending the clinic belongs to the middle and lower class.

Criteria:

Every second child from 2-5 years old is selected excluding those children who come for follow-up.

Conclusion:

1. Most of the infants (87%) are breast-fed. (Table: 1)
2. 22.7% infants are exclusively breast-fed. (Table:2)
3. 12.7% infants are never breast-fed. (Table: 1)
4. 17% infants are getting mother's milk as well as buffalo's milk. (Table: 1)
5. Pure buffalo's milk is available to only a few infants (6.6%). (Table:3)
6. Common practice is to dilute the milk. 18% infants are getting diluted buffalo's milk. Of these 45% are getting 50% diluted buffalo's milk. (Table:3)
7. 8.5% infants are getting formula milk. (Table:4)
8. No gross gender differences are noted except for the formula milk. 10.9% males are getting formula milk as compare to 5.9% females.

Suggestions:

1. No health policy by the government can succeed without the participation of family physicians.
2. To support breast feeding indirectly, the taxes on the formula milk should be high.
3. Breast feeding steering committee should provide posters for displaying in every family physician's clinic.
4. Every family physician should take it as a moral duty to advise breast-feeding for a healthier next Generation.
5. A huge number of lady counselors have been elected in the recent election. This force can be used to promote breast-feeding.
6. No one can get the successful results in Pakistan by only relying on the print media as majority of our population is illiterate. Verbal communication is necessary to break the old traditions like giving gurti, diluting milk, giving gripe water daily, giving rose water (arq), giving water since birth in summer season.
7. Active involvement of family physicians in National Health Policy is needed. If the government is serious to accomplish its policies, a true representation of family physicians in the Pakistan Medical and Dental Council is mandatory.

First Dietcare Centre
BULLETIN

Vol. 5 No. 10
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Unsafe drinking water could be killing you

At the recent UN summit conference in Johannesburg on sustainable development and the environment, former South African President Nelson Mandela - perhaps the world's most respected statesman - urged world leaders to put water at the top of the development agenda.

Today, half the planet's six billion inhabitants lack adequate treated water, and more than one billion people do not have access to safe drinking water. In Pakistan the percentage is even higher. Here, an estimated 70 per cent of people do not have access to safe drinking water. The remedies to this problem are within reach but require the efforts of everyone, from water agencies, governments and industries to the inhabitants of mega cities like Karachi and Lahore, neglected small towns with no proper water-supply infrastructure and isolated rural communities with no supply infrastructure at all.

Water is a vital element in our lives. We use it for drinking, cooking, bathing and cleaning, but how often do we think about it as a health risk? These days many people are worried about the quality of their drinking water, but few of us realise that water that looks, tastes and smells good can still be hazardous to our health.

Ground water contamination has become the principal environmental concern for the next decade and beyond. Rainwater flushes airborne pollution from the skies that ends up in rivers, streams, lakes and other reservoirs. With contamination by toxic organic chemicals, ground water can remain polluted for years, because nature supplies few, if any, cleaning or diluting forces. In today's increasingly industrialised and increasingly crowded world, nobody can take for granted that their drinking water is safe.

The most common sources of contamination are a result of human activity such as discharges from factories, leaking underground pipes and storage tanks, improperly treated sewage-disposal, and probably the most common of all, agricultural chemicals and pesticides trickling and seeping into underground water acquifers. Huge numbers of water wells, lakes, streams and rivers are now either contaminated or in danger of becoming contaminated as chemicals creep through these acquifers. Even surface water found in a pristine mountain stream may contain *Giardia* or *Coliform* Bacteria from the faeces of wild animals.

Several contaminants occur in nature that may present a health hazard if found in drinking water. They include bacteria, viruses, uranium, radium, arsenic and fluoride. Though many people worry about the inorganic pollutants such as lead or pesticides, microbial contaminants are by far the greater threat.

A variety of human pathogens are known to be present and transmitted via water. According to the World Health Organisation, more than 17 million deaths a year worldwide are caused by infectious and parasitic diseases. Up to 80 per cent of these deaths are thought to be linked to contaminated water, equaling over 37,000 deaths a day. Water contamination is a far bigger killer than either malaria (2 million deaths a year) or air pollution (3 million deaths a year).

Throughout the world, one in four hospital beds is occupied by someone who is there because he or she became ill from consuming unsafe water. International public health agencies suspect that reported waterborne disease is only the tip of the iceberg relative to the actual number of cases. Many victims of waterborne illnesses either do not seek medical attention or are not properly diagnosed, resulting in significant underreporting.

In addition, even when a waterborne outbreak is recorded, no etiological agent is identified. This is true even of rich countries with well-developed healthcare systems. In the United States, for example, for microbial waterborne outbreaks between 1980 and 1990, the causative agent was not identified in 43 per cent of all cases.

Enteric pathogens, or harmful organisms of the gastrointestinal tract, are primarily passed via the faecal/oral route. Once a pathogen is ingested, they multiply and are excreted in the faeces of infected individuals. Other environmental pathogens are transmitted via aerosols, vapours and mists, and can enter the body through mucous membranes of the eyes, nose and mouth. In addition, abrasions in the skin may offer a route of pathogen entry and infection.

Many of the enteric waterborne viruses are known to persist for months in the aquatic environment, much longer than most enteric bacteria. Their small size also allows for extensive movement through soil and water. While waterborne viruses are also known to cause vomiting and diarrhoeal disease, the range of illnesses varies and includes serious or fatal afflictions such as meningitis, hepatitis and paralysis. The incubation period from the time of exposure to the manifestation of illness may be anywhere from 1-to-65 days, depending on the nature of the virus, with symptoms generally lasting hours to months.

There are three basic categories of disease-causing pathogens commonly found in untreated water:

The first category is protozoa: This category includes the well-known *Giardia*, and the not-so-well-known *Cryptosporidium*, or Crypto for short. Their size ranges from 1 - 16 microns (a micron is one-millionth of a metre; anything smaller than 20 microns is invisible to the naked eye).

The second category is bacteria: Commonly known bacteria include such organisms as E-coli, Vibrio Colera, and Salmonella. They range in size from 0.2 to about 10 microns.

The third category is viruses: Commonly known viruses include Hepatitis A and Polio. Viruses are tiny; they range in size between 0.02 and 0.085 microns.

Few water mains lines going into residential houses or buildings incorporate an effective filtration system. The chances are therefore quite high that there will be initial contamination when you fill up your water storage tank. Further contamination is then inevitable with the passage of time. A recent test conducted with a large container filled with tap water showed an initial bacterial count of 18 per millilitre (ml), which after only a week had risen to 45,000 per ml. Thus, the tanks commonly used to store and dispense fresh water leave much to be desired unless subject to additional treatment. This may range from the simple use of purifying agents added to water, filtration, or complete water treatment.

Contaminants present in water can range from the objectionable to the harmful. Objectionable contaminants are those that affect the taste, smell and colour of

BALANCED DIET, HEALTHY LIFE
DIETCARE

fixtures. If your home has naturally soft water it makes it even easier to pick up lead as soft water corrodes plumbing. Other sources could be exposure to lead-based paint, urban soil and dust.

It is possible to reduce lead levels in drinking water: Filtration systems to treat drinking water in the homes significantly reduce lead, in addition to reducing other contaminants as well. These include reverse osmosis, distillation, water softening, and solid block and precoat adsorption filters which are made from activated carbon or aluminia. Usually the water treatment units are composed of a combination of these technologies. Only solid block and precoat absorption filters significantly reduce lead, activated granular carbon filters are not as effective in reducing lead. If you suspect lead in your water, have your water tested for lead contamination and then take appropriate action based on the results.

Health Effects of Chlorine in Drinking Water: Until recently, concerns about drinking water focused on eliminating pathogens (bacteria). Chlorination of drinking water is a major factor in the reduction of mortality rates associated with water borne pathogens. The use of chlorine was believed to be safe and was thought to make any municipal water supply as pure as mountain spring water, that chlorination destroyed all microbial life leaving no trace of it afterwards. Though chlorine does reduce the risk of infectious disease, it is now thought to account for a substantial portion of the cancer risk associated with drinking water.

Chlorine, a hologen, is a corrosive, poisonous, greenish-yellow gas with a suffocating odour. Chlorine is changed to liquid form by compressing the gas. The resulting liquid is then used for mixing in the water to destroy bacteria. But this chlorine ends up reacting with organic matter such as leaves, twigs, or agricultural chemicals in the water and forms dangerous, carcinogenic trihalomethanes.

Concerns about the effects of chlorination by-products in water have resulted in numerous epidemiological studies, and it was found that people who regularly drink tap water containing high levels of chlorine by-products have a greater risk of developing bladder and rectal cancers than people who drink unchlorinated water. These studies have estimated that about 9 per cent of all bladder cancer and 18 per cent of all rectal cancer cases are associated with long-term consumption of chlorine by-products (trihalomethanes). These products can also cause artherosclerosis and its inevitable result, the heart attack or stroke.

Point-of-use water treatment systems are effective in reducing risks associated with chlorination of water. Use of activated carbon filters is the simplest remedy.

Health Effects of Nitrates and Nitrites: Nitrates and nitrites are chemical compounds commonly used in fertilizers. These fertilizers add nitrogen compounds in the soil, an essential nutrient for growth of plants and crops. These nitrates and nitrites in the soils, not surprisingly, also seep into drinking ground water supplies.

Nitrites can cause problems in young children as they bind very strongly to haemoglobin, and can affect the blood's ability to carry and release oxygen. Nitrates are also converted to nitrites in the digestive tract. This causes shortness of breath, increased susceptibility to illness, heart attacks and in extreme cases death by asphyxiation. Nitrates are usually not a problem for older children and adults.

How can you tell if your water has nitrates in it? The only way is to have the water tested by a reputable laboratory. Excessive nitrates can be treated by a variety of methods. Point-of-use systems reduce the levels by reverse osmosis filtration, distillation or by a disposable mixed-bed deionizer. One system is very much like a water softening method, using a strong base anionic exchange resin bed rather than the cationic exchange resin bed commonly used for water softening. It is regenerated in a similar way to conventional softeners.

Radon: the invisible health risk

You can't see, smell or feel Radon. Nearly every home has some level of radon in the air and about 10 per cent of homes have a higher level than that considered safe. Radon is a radioactive gas that breaks down into radioactive decay products. It becomes dangerous when these decayed products become lodged in a person's lungs or respiratory tract. That eventually causes lung cancer. For people who smoke the risk is higher.

Radon is a gas that originates in the soil, but travels through to be released in the air. Radon gas can enter the home in a variety of ways, including through dirt floors, cracks in concrete floors and walls, floor drains, tiny cracks or pores in hollow walls, and from the water supply. Estimates show that some 5 per cent of a home's radon level is linked to the water supply. Higher levels of radon are generally found in private well water supply than municipal water systems. When water is supplied by a municipal system, radon is generally released while the water is being treated in their system and when the water is held in the large storage areas where radon escapes into the open atmosphere. Water from private wells, especially when stored in underground or enclosed water tanks, a high concentration of radon can accumulate. Radon in home water is released when showering, washing dishes, or watering indoor plants for example. Levels of radon gas vary from area to area depending on the geographical location.

Is bottled water a safe alternative?

Even in a country like the United States, water is considered a "food" and the quality standards for bottled water established by the US Food and Drug Administration (FDA) specify that bottled water need only be as safe as tap water. This means that even though consumers expect that it is much purer than tap water, there are no real regulations, nor guarantees, that this is so.

Contrary to the popular image of remote meadows and natural springs, some of the bottled water sources are located near heavily populated areas and industrial sites where water is more likely to be contaminated with toxic chemicals and other pollutants.

Some of the possible reasons for bottled water not being upto standard could be due to improper location and source of water supply, poor upkeep and maintenance of purification plant, failure to properly rinse bottles before filling or refilling, use of poor grade of plastic bottles where toxic chemicals could leach into the bottled water, rusty storage tanks, etc.

In a report prepared by the Assembly Office of Research for the California State Legislature, some of the problems of bottled water reported were bacteria in water, foul taste of gasoline and diesel fuel, high level of mercury, arsenic, chloroform, benzene, nitrates, phenol, trihalomethanes, and the presence of algae, mould, dirt, insect larvae, mosquitoes, dead flies and other insects, chewing gum and twigs.

This, however, does not mean that all bottled water is bad. Companies of repute do insure and provide good bottled water.

> **Ground water contamination has become the principal environmental concern for the next decade and beyond. Rainwater flushes airborne pollution from the skies that ends up in rivers, streams, lakes and other reservoirs. With contamination by toxic organic chemicals, ground water can remain polluted for years, because nature supplies few, if any, cleaning or diluting forces. In today's increasingly industrialised and increasingly crowded world, nobody can take for granted that their drinking water is safe**

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Nutrition, Immunity, and Cancer

Poor populations around the world that suffer from malnutrition are more susceptible to infection than those who receive adequate nutrition. Investigators studying the relationship between the immune system and nutrition have found that nutrition affects immunity[1,2] and also affects the development of cancer[3,4] either directly or indirectly via the immune system.

The immune system is a complex interaction of blood cells, proteins, and processes that protects you from infections, foreign substances, and cancer cells that spontaneously develop in the body.

In 1989, research at the Shriner's Burn Institute in Cincinnati showed that administration of a special liquid diet to severely burned patients begun the day they were burned reduced the risk of infection by 50 percent. The special diet consisted of protein, vitamins including A and E, minerals, and iron, as well as omega-3 fatty acids.

White blood cells and antibodies are two major armies of the immune system. These armies arise separately but are related and dependent upon each other for their development and maturity. The lymphocyte, a specific type of white blood cell, is the main cell involved in cellular immunity. Lymphocytes make up only a small portion of the blood, comprising only about 15 to 20 percent of all white cells. The lymphocyte population is divided into two large groups, based on particular markings on the outer surface membrane of the cell.

T lymphocytes, or T cells, are one group of lymphocytes. They are derived from or are under the influence of the thymus, which is an organ in the neck and front part of the chest that is functionally active in early childhood. T cells are responsible for your defense against cancer, fungi, certain bacteria (intracellular), some viruses, transplant rejections, and delayed skin reactions (tuberculosis skin test). T cells are further divided into several subpopulations: helper T cells and suppressor T cells, those which either help or hinder normal immune cellular function.

Proteins called antibodies or immunoglobulins are produced by the other major group of lymphocytes, the B lymphocytes, or B cells. B cells may have their origin in the bone marrow, from which they derive their designation. Antibodies are formed by the B cell in response to a foreign substance introduced into the body. For example, when a person is given a vaccine against polio, antibodies to this foreign substance are made by the B cells. If the polio virus enters the body in an infectious state after a person has been vaccinated, the previously formed antibody, which is circulating in the blood, will attach to this foreign intruder and dispose of it with the help of defending white blood cells or other proteins called complement proteins or a combination of both. The same process of antibody production is initiated by some cancer cells. Killing white blood cells or complement proteins, when activated by an antibody, destroy a foreign-appearing cell by making holes in the foreign cell's membrane, thereby allowing water to rush in and explode the cell. In 1980, I showed how a white blood cell kills a foreign cancerlike cell. Figure 4.1 shows a white blood cell (center) killing several cancerlike cells. Notice that the white blood cell extends feetlike processes that aid in killing the targets.[5]

Phagocytes are another group of white blood cells that reside in the blood and body tissues and are part of your defenses against foreign invaders. These also act as policemen to recognize and dispose of abnormal cancer cells and other foreign substances. Phagocytes can perform this task alone or can recruit antibodies and complement proteins to aid in the disposal.

IMMUNOLOGY AND CANCER

The immune system is extremely intricate and finely tuned. If any one aspect of the system malfunctions because of poor nutrition, or if it is destroyed, you may become susceptible to cancer and foreign microbial invaders. The white blood cell army and the antibody army must be functioning perfectly to destroy any cancer cell or foreign invader and prevent either one from gaining a foothold in your body.

The major histocompatibility complex is part of your genetic make-up and is another component of the immune system, acting as a commander of the white blood cell and antibody armies. This complex allows the immune system to recognize the parts of your body so that it does not destroy them as it would destroy foreign substances. At the same time, it can recognize a substance or tissue (histo-) as not belonging to its body and subsequently take the necessary steps to destroy it. The histocompatibility complex is responsible for rejection of transplanted organs such as kidneys and hearts. If the histocompatibility complex is not working properly, a virus capable of converting normal cells to cancer cells may enter the body without being attacked because the immune system did not recognize it as foreign. The virus, if not destroyed, will convert normal cells to cancer cells in a process called transformation, and the cancer will multiply and eventually kill the person.

In 1970, F.M. Burnet introduced the concept of immunosurveillance, which states that killer cells of the immune system watch, or keep a surveillance on, all cells in the body and immediately destroy any cells that start to have a malignant or cancerous potential.[6] There is a lot of evidence to support this concept. The most clear-cut and convincing evidence comes from observations of patients with suppressed immune systems caused by drugs or radiation or an inherited disorder. Patients with inherited immunodeficiencies, whose immune systems do not function normally from birth, or patients whose immune systems acquire a malfunction later in life have one hundred times more deaths due to cancer than the expected cancer death rate in the normal population.[7,8] Kidney transplant patients, who receive drugs to suppress the immune system's ability to reject the new kidney, also have a higher rate of cancer than would be expected.[9,10] The cancers most frequently seen in these cases are the lymphomas and epithelial cancers; however, all other types of cancers have been reported as well.

The immune system is relatively immature in infancy, and then runs down and does not function well in old age. These two times of life have the highest incidence of lymphocytic leukemia. Other immune-deficiency states that can lead to cancer are seen with malaria, acute viral infections, and malnutrition.

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NUTRITION AND THE IMMUNE SYSTEM

Nutritional deficiencies decrease a person's capacity to resist infection and its consequences and decrease the capability of the immune system.[11] In old age, there is a decrease in skin hypersensitivity reactions,[12-14] a decreased number of T cells,[15,16] and impairment of some phagocytic functions. Surveys of the population have discovered nutritional deficiencies in senior citizens that also lead to impairment of the immune system.[17] It is possible that the gradual impairment of the immune system associated with aging may, in fact, be due to one or more nutrient deficiencies. Poor nutrition adversely affects all components of the immune system, including T cell function, other cellular-related killing, the ability of B cells to make antibodies, the functioning of the complement proteins, and phagocytic function. When several of these functions or processes are impaired, the ability of the entire immune system to keep a watchful eye for cancer cells, abnormal cells, or foreign substances and to dispose of them is also markedly impaired.

Protein deficiency affects all the organs in the body. The number of digestive enzymes produced is reduced, and absorption of nutrients is impaired. With severe chronic protein deficiency the heart muscle atrophies. The immune system is also severely affected. In diets that are only moderately deficient in protein, phagocytes and T cells are reduced in number,[18] and their ability to kill cancer and other abnormal cells is impaired.[19] The amount of antibody is slightly reduced as is the speed with which it attaches to an "enemy."[20] The complement proteins also have impaired function in this state. Hence, a person who is not consuming the proper amount of protein will have a malfunctioning immune system that will not be able to deal effectively with cancer cells or infection.

The immune system is affected by both hypoglycemia (low blood sugar) and hyperglycemia, as in diabetes mellitus. C.J. Van Oss has found that phagocytic function in humans is impaired if the blood sugar level is very low.[21] Much more research has been done concerning the function of the immune system in diabetes. The number of T and B cells is normal in diabetes, but their functions are impaired: phagocytic function as well as cellular killing.[22,23] The degree of impairment correlates very well with the fasting blood sugar level and then improves when the sugar level becomes normal.

Lipids have a significant effect on the functioning of the immune system. Cholesterol oleate and ethyl palmitate inhibit antibody production, probably because these lipids do not allow the immune system to recognize the foreign substance.[24] Researchers E.A. Santiago-Delpin and J. Szepsenwol wanted to know what effects lipids had on T lymphocytes.[25] They first grafted pieces of skin from one mouse to another of dissimilar genetic make-up and found that the grafted skin was rejected in a very short time. They then fed the recipient mouse a high-fat diet and found that it accepted the graft for a very prolonged time, indicating that the high-fat diet impaired the ability of the animal to reject the foreign graft. The T cell is involved in this kind of rejection as well as in cancer cell rejection, and its ability to function is impaired if you eat a high-fat diet. In other experiments, phagocytosis was studied. Another saturated fat, methyl palmitate, was found to markedly impair phagocytosis for at least seventy-two hours after a single injection.[26] There is great controversy and discrepancy among experiments dealing with polyunsaturated fats and their effect on the immune system. Some investigators report that a diet low in polyunsaturated fats enhances the immune system,[27] and some show no such enhancement.[28] In all these studies, it must be kept in mind that the significance of the results is unclear because large amounts of lipids were used. It has not been determined whether physiological doses of the same lipids have similar effects on the immune system as do these large amounts of lipids.

The Epstein-Barr virus may manifest itself as entirely different diseases in different people as a result of varying degrees of impairment of the immune system. The extent to which the immune system is weakened or damaged is partly determined by the nutritional status of the individual prior to infection. Epstein-Barr virus is implicated in a relatively benign disease, infectious mononucleosis; a slow-growing cancer, nasopharyngeal cancer; and a rapidly growing, usually fatal cancer, Burkitt's lymphoma; as well as other diseases. Why does one person's immune system permit infectious mononucleosis to develop and another person's immune system permit a fatal cancer to develop? The answer is very complex and not well defined at all, but nutritional status is a factor. Your *nutritional status* is determined by how well your diet and supplementation program is meeting your nutritional needs. The better your nutritional status, the better your immune system, and the better off you will be.

First Dietcare Centre

Under the Guidance of American Dietetic Association (ADA), USA

Meat

Meat has been a principal food for centuries, and is still in great demand, despite its expense.

The main reason for the high price of meat is the amount of time, effort, and feed it takes to rear animals for meat. Large amounts of food, e.g. pulses, cereal grains, nuts, vegetables, fish meal, and grass have to be provided, and the conversion of these into meat is inefficient. Some people feel that this is a waste of food that could be used to feed humans, particularly in poor countries.

When they reach the right age, animals for meat are slaughtered in abattoirs. The cleaned and gutted carcases are hung in cold store, inspected, and graded, ready for sale to a butcher.

The butcher cuts the meat into joints or cuts, according to the amount and position of bones, lean meat, and fat in the various parts of the body. Lean, tender joints are more popular and difficult to produce and therefore cost more, so the butcher must separate these accurately.

Meat is sold in specialist butchers' shops, supermarkets, or direct from farm shops. It can be bought in bulk for freezing (e.g. as a half or whole animal) and many butchers joint it for the customer. Pre-frozen meat joints can also be bought in bulk from freezer centres. Good butchers should have a sound knowledge of what they sell and should be able to advise customers about the suitability of different joints for cooking.

First Dietcare Centre

Under the Guidance of American Dietetic Association (ADA), USA

Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com. Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

آپ دوسروں کے مسائل میں گھرے ہوئے ہیں تو پھر یہ کتاب آپ کی کایا پلٹ سکتی ہے۔ یہ کتاب نہیں سچ مچ یہ دل کے دوروں سے بچانے کی دوا ہے۔

کتاب 01 ون اردو منٹ مینجر

بندروں سے کیسے نپٹتا ہے؟

تحریر: ڈاکٹر صداقت علی

ابھی فون کیجئے ہمارا کوریئر کتاب پہنچائے گا

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BALANCED DIET, HEALTHY LIFE

DIETCARE

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First DietCare Center

Vol. 6 No. 2

February 2003

Food intolerance

Most people can eat many different foods without any problems. However, some people cannot tolerate certain foods and react badly if they eat them.

There are different types of food intolerance.

Enzyme deficiency

This is is when the body is missing one or more of the enzymes needed to digest and use nutrients in food.

Lactose intolerance is an example. Normally, the enzyme lactase digests lactose in the small intestine (see p. 35). If the enzyme is missing, the person will experience nausea (feeling sick), bloating (swollen abdomen), pain in the abdomen, and diarrhoea. People with this condition must avoid milk and milk products, as these contain lactose. It is possible to buy lactose-reduced foods.

Phenylketonuria (PKU) is another example. It is caused by a lack of the enzyme phenylalanine hydroxylase, which the body needs in the liver. If it is not treated, the brain gradually becomes damaged.

PKU can be detected by taking a small sample of blood from the heel of a baby, between 6 and 14 days old. (This is often called the heel-prick test, or Guthrie test after the person who invented it.) If the result is positive, action must be taken quickly.

PKU is treated by giving a low-phenylalanine diet, with regular checking of the blood and progress of the patient. Advice on feeding will be given by a hospital dietitian who will work closely with the patient and the parents. Lists of the phenylalanine content of foods are available, but it can appear in unexpected foods such as the sweetener **aspartame** (which is sold under the brand names of Nutrasweet and Canderel). This sweetener is put into many different food products, so labels must be checked carefully.

Food allergies

The body has an immune system to protect it from harmful things such as viruses. Sometimes a person's immune system will react strongly to a particular substance. The person is said to be allergic to the substance, and the substance is called an allergen. In foods, the allergen is often a protein.

Allergies to cow's milk, eggs, soya, and monosodium glutamate (a flavour enhancer) are fairly common. The symptoms can include eczema, asthma, skin irritations, headaches, and sickness.

Some allergic reactions may cause changes in behaviour. There is some evidence that certain food colours and preservatives may cause hyperactivity (uncontrollable activity and violent changes of mood) in some young children.

Some allergic reactions can be very serious. For example, certain people have an anaphylactic reaction to an allergen in peanuts. This means that a tiny quantity of the allergen causes their whole body to react immediately and severely. Their blood vessels leak, the linings of the bronchial tubes in the lungs swell making breathing difficult, lips and face swell, and blood pressure falls. The patient will collapse and die unless treated immediately with an injection of adrenalin.

Malabsorption

This is when nutrients are not absorbed after digestion, but pass through the body. There are many causes, including defects in the intestines, drugs, conditions such as diabetes (see p. 73), surgery, infections, and enzyme deficiencies.

One example is **coeliac disease**. It is caused by sensitivity to the protein **gluten**, which is found in many cereal plants, especially wheat. In sensitive individuals, gluten damages the lining of the intestine (the mucosa). Why this happens in some people and not others is not clear. The damage prevents nutrients from being absorbed.

Children become unhappy, lethargic (no energy), and have no appetite. They produce pale and bulky faeces, and the abdomen swells. The rest of the body becomes thin, and the child fails to grow properly. Adults with coeliac disease often have anaemia, weight loss, and diarrhoea.

Gluten is found in barley, rye, and oats, as well as wheat, so patients must not eat these in any form. Wheat protein is often added to foods, so it is important to check food labels. Some foods are labelled to indicate that they are gluten-free.

Diabetes mellitus

Glucose is carried in the blood to all body cells to supply them with energy. In order for glucose to enter the cells, a hormone, **insulin**, is required to act as a chemical 'key'.

Insulin is produced by the pancreas. If it does not make enough, the glucose will stay in the bloodstream and will eventually spill over into the urine. The lack of glucose in the cells means they will have to obtain energy from the body fat stores, which will result in a loss of weight and general weakness.

This condition is called **diabetes mellitus** (diabetes for short), and the patient is said to be diabetic. It may be present at birth or may develop at any age.

There are 2 types of diabetes:

1 **Insulin-dependent diabetics** do not make any insulin in their body. They must have daily injections of insulin, and regular, healthy meals to keep the diabetes under control.
2 **Non-insulin-dependent diabetics** do not produce enough insulin to control their blood sugar level properly. They must eat regular, healthy meals, and, if necessary, try to lose some weight. They may also need to take tablets.

The British Diabetic Association (BDA) gives advice to diabetics, and keeps them informed about developments in treating the condition. It currently advises diabetics to eat:

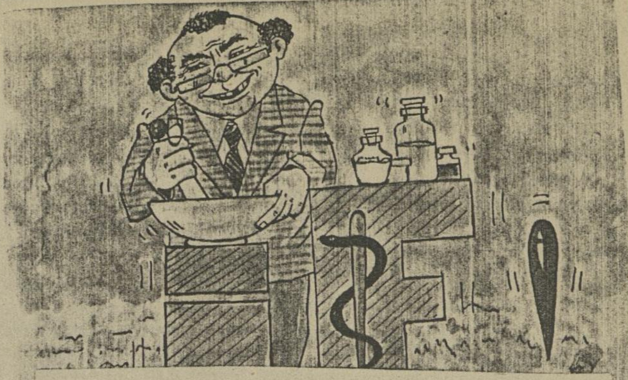
1 Regular, healthy meals including a variety of different foods.
2 More high-fibre, starchy carbohydrate foods, e.g. wholemeal bread, pasta, jacket potatoes, pulses, brown rice, and beans. The BDA recommends that at least 50% of the daily energy needs should be provided by these foods.
3 Less sugar and sweet foods, and to choose reduced-sugar or artificially sweetened alternatives.
4 Less high-fat and fried foods.
5 Less salt, to help reduce the risk of high blood pressure.
6 A maximum of 3 units of alcohol per day for men and 2 units for women. (1 unit of alcohol is 1 measure of spirits, or 1 glass of wine, or 275 ml (half a pint) of beer, cider, or lager, or 1 small glass of sherry.)

Diabetics are encouraged to attend regular clinics to check their blood sugar levels and general health. They also do tests at home to check how much sugar there is in their urine, and many patients do blood tests as well.

Special diabetic foods

A variety of foods, including biscuits, jams, and chocolates, are produced specially for diabetics. They use a sugar alcohol, sorbitol, instead of sucrose and glucose. Sorbitol is absorbed slowly and converted to fructose in the liver, which prevents a rapid rise in blood sugar levels.

The BDA does not recommend these products as they are not especially beneficial, and tend to be expensive. By following the advice on diet given above, and taking insulin or drugs if necessary, most diabetics should be able to control their condition effectively.



OBESITY

Obesity affects about 35 percent of all Americans. Animal studies have shown that those animals with lean body masses have lower rates of cancer development as well as greater longevity.[14-18] Epidemiological studies also show the same correlation. In one study, when per capita total caloric intake was examined relative to cancer incidence in twenty-three countries and to cancer mortality in thirty-two countries, a significant correlation was found between total calories and each of the following: the incidence of rectal cancer in males, the incidence of leukemia in males, and the rate of mortality from breast cancer in females.[19] Another researcher found obesity to be a factor in breast cancer in the United States as well.[20] Of the postmenopausal women studied in the Netherlands, the heavier and taller ones were found to have a higher rate of breast cancer.[21] And this same correlation was seen in other studies.[22,23]

Obesity is also a major risk factor for the development of endometrial cancer in postmenopausal women. Obese postmenopausal women produce more estrone. This increased production is directly related to the number and size of the woman's fat cells since estrone is manufactured in the fat cells from androstenedione. Similarly, postmenopausal women who take estrogens daily for symptoms of menopause also have a higher incidence of endometrial cancer. The mechanism is probably the same. Most obese women have lesser symptoms of menopause than thinner women, presumably because of their increased production of estrone.

The American Cancer Society sponsored a study from 1959 to 1972 in which mortality from cancer and other diseases among 750,000 men and women was recorded and compared with their weights.[24] Those who were overweight by 40 percent had a significantly higher cancer mortality rate. For men, the mortality was from cancer of the colon and rectum; for women, from cancer of the gallbladder, biliary passages, breast, cervix, endometrium, and ovary. Many other studies confirm the relationship between obesity and increased risk of cancers in various sites.

Obesity also brings with it an increased risk of developing cardiovascular disease, gallbladder disease, and adult-onset diabetes. Obese people tend to have higher blood cholesterol and triglycerides.

Right to basic needs

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DIETCARE

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Alcohol and Caffeine

THE PRICE OF ALCOHOL ABUSE

Industrial losses in the United States due to alcohol cost about $45 billion every year. Many more billions of dollars are added to this figure when you consider that alcohol is involved in 50 percent of all traffic fatalities, 30 percent of small-aircraft accidents, and 66 percent of all violent crimes. Furthermore, the totals are higher still when you consider the losses due to diseases aggravated by alcohol abuse, and losses due to alcohol-induced poor decision-making in government, industry, education, law, the military, and medicine. About 68 percent of adult Americans abuse alcohol.

It is estimated that 100 million Americans drink alcohol, and over 28 million—1 of every 8 Americans—are children of alcoholics. Alcohol-related costs total about $117 billion every year; for other drug abuse, the cost is $60 billion a year. This total of $177 billion a year represents about $63 a month for every man, woman, and child in the United States.

All of society pays for substance abuse. Employers lose productivity, you pay the tax bill for programs and services, and you also pay higher insurance premiums. You do the same for tobacco abuse as well.

Excessive alcohol consumption is a risk factor for cancers of the mouth, pharynx, larynx, esophagus, pancreas, liver, and head and neck. Alcohol acts synergistically with tobacco smoking in the development of other gastrointestinal cancers and urinary bladder cancer. A greater frequency of these cancers occurs in men, blacks, people on the low end of the socioeconomic scale, and older people. Alcohol is directly responsible for causing cirrhosis of the liver, which is the seventh leading cause of death in the United States. Fifty percent of alcoholics die from cardiovascular diseases and 20 percent from accidents, suicides, and homicides.

Nutrition and Alcoholism

Alcoholics have more nutritional deficiencies than all other groups of people.[1] Alcohol is a source of calories, and alcoholics consume this rather than foods with much better nutritional value. Alcoholics will consume about 20 percent of their total calories as alcohol.

Many vitamin deficiencies are severe in alcoholics. The most important is thiamine (vitamin B_1) deficiency. A severe brain disease called Wernicke-Korsakoff syndrome can be rapidly reversed in alcoholics by the administration of thiamine. Folic acid and vitamin B_{12} deficiencies are seen in alcoholics due to the lack of fresh fruits and vegetables in their diets. These deficiencies are responsible for anemias, among other things. Pyridoxine (B_6) deficiency is responsible for alcoholics' peripheral nerve problems. Vitamin C is normally stored and activated in the liver, but alcoholics have a deficiency of vitamin C because of their liver disease. Because of their vitamin deficiencies, alcoholics may complain of visual problems and sometimes infertility, since their sperm production may be impaired. In addition to vitamin deficiencies, alcoholics have several mineral deficiencies including calcium, zinc, and magnesium. Since alcohol can interfere with the absorption of iron from the gut, some alcoholics develop the Plummer-Vinson syndrome, which is characterized by a cluster of symptoms including difficulty swallowing; a red, smooth tongue; and iron deficiency anemia. People with this syndrome have a high rate of cancer of the mouth.

Alcohol and Immunity

Not only does consumption of alcohol rob the body of many nutrients, it also increases complications from cirrhosis of the liver, gastrointestinal hemorrhage, trauma, cancer, and infection. The high incidence of infection among alcoholics is attributed to dulled mental function; breakdown of the protective mucous lining of the nose, mouth, and airways; aspiration of saliva into the lungs; exposure out-of-doors; and malnutriton. The frequency and severity of infections are so pronounced among alcoholics that most physicians believe that alcohol itself directly inhibits the body's immune defense mechanisms. Clinical observations and laboratory studies support the long-held conviction that alcohol depresses the function of the immune system.

The clinical evidence linking alcohol intake and depressed immune function dates back to 1785. There is a strong correlation between the amount of alcohol consumed and the degree of immune dysfunction. Even moderate users of alcohol have very high rates of infections, especially pneumonia. Alcohol interferes with normal immune defense mechanisms (see Chapter 4 for a review).

The neutrophil leukocyte, a kind of white blood cell, is decreased in number and its function is retarded with chronic or acute ingestion of alcohol. As you may remember from Chapter 4, the function of these cells is to fight and kill invading bacteria. Alcohol consumption of this type also causes a decrease in the number of lymphocytes and impairs their function, especially the T cells and natural killer cells, which seek out and destroy viruses and cancer cells. Monocytes, too, are impaired by alcohol ingestion. Suppression of this cellular arm of immunity leads to a high rate of tuberculosis infection and viral infections. Because cellular killing is inhibited, latent viruses, like the Epstein-Barr virus, become activated and there is a high degree of susceptibility to all viruses.

Alcohol ingestion significantly interferes with the ability of the immune system to make antibodies against a new invading antigen, like a virus or bacterium. The complement protein defense system is also adversely affected by alcohol consumption.

Thus, both acute and chronic use of alcohol interferes significantly with our defense mechanisms. Chronice use of alcohol adversely affects the cellular arm of the immune system and increase the risk for tuberculosis, viral infection of all types, and cancer. Alcohol should be considered an immune suppressive drug with far-reaching effects.

Alcohol, Cancer, and Other Diseases

Alcohol may exert its carcinogenic effects by direct topical action on the mouth, pharynx, and esophagus. The evidence that alcohol is a topical carcinogen is that mouthwash users have a high rate of oral cancer and mouthwash is rarely swallowed. Alcohol and tobacco

لگتا ہے آخرکار
شیخ صاحب کو اپنی صحت
کا خیال آ ہی گیا!
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Continued.....Alcohol and Caffeine

account for 75 percent of all oral cancers in the United States. And a considerable amount of evidence shows that alcoholism, because of the nutritional deficiencies associated with it, significantly increases the risk of smoking-related cancers.

The rate of liver cancer in alcoholics who have cirrhosis is rising. In addition, there are many other complications of cirrhosis, including varicose veins in the esophagus, which can bleed; ascites (fluid in the abdomen); muscle wasting; and kidney failure. Alcohol induces an inflammation of the pancreas and other abnormalities of the pancreas, and the heart can become severely enlarged and nonfunctional with alcoholism.

One study shows that women who consume alcohol have a greater risk of developing breast cancer than nondrinkers.[2] The preponderance of evidence also shows an association between alcohol consumption and the development of breast cancer.[3-6] A higher risk of developing breast cancer was seen even in women consuming only a moderate amount of alcohol, especially in the younger group. A moderate amount of alcohol in these studies constitutes two to four drinks a week. Moderate alcohol consumption is also an independent risk factor for the development of heart disease and stroke.[7,8]

Premature testicle and ovary shrinkage are seen in alcoholics. Peptic ulcers are also common and are often quite large. Infants born of alcoholic mothers may have a variety of problems including defects in the brain, in intellectual development and physical growth, and in the facial features. This is called the "fetal alcohol syndrome," in which alcohol acts to transform normal cells of the fetus into abnormal cells. The number of persons affected in this way is grossly underestimated.

CAFFEINE AND CANCER

Caffeine is the most popular drug in North America and in many other parts of the world. It is found in coffee, tea, cola beverages, and chocolate.

Coffee drinking may be related to cancer of the lower urinary tract, including the bladder.[9] Studies show that the risk for these cancers is independent of other factors like tobacco smoking, and these cancer rates are very high in persons who drink more than three cups of coffee a day. This risk is probably related to other compounds in coffee as well as caffeine.

It is well known that caffeine can cause damage to genetic material[10,11] and thereby potentially lead to the development of cancer by altering DNA. It also interferes with the normal repair mechanisms of DNA and other genetic material. Caffeine can act as a teratogen, which is an agent that causes mistakes in gene production leading to malformations of a fetus.

Excessive coffee consumption by pregnant mothers can lead to lower infant birth weights.[12] Pregnant women who consumed 600 milligrams or more of caffeine per day have a higher incidence of abortion and prematurity.[13]

In a study of coffee consumption in 1,130 male college graduates for nineteen to thirty-five years after graduation, it was found that those who drank five or more cups of coffee a day had a 2.8 times higher risk of developing heart disease.[14] This study also showed coffee to be an independent risk factor for the development of heart disease.

Although alcohol and caffeine are two important risk factors for cancer, the decision to consume them is *yours*. You can again decide about the status of your health!

Choosing meat

As meat is an expensive food, it is wise to choose it carefully, considering the following factors:

Value for money

1. There should not be too much bone in a joint as this reduces its value for money. However, some is needed to produce flavour when cooking.
2. Cheaper cuts of meat, which are generally tougher, are just as nutritious as more expensive, leaner cuts. If cooked well, they can be made into appetizing and nutritious meals.
3. There should not be too much visible fat on the joint.

Appearance

Meat should have the following physical characteristics:

1. Colour

Meat	Colour of lean	Colour of fat
Lamb	pink/brown	cream/white
Mutton	dark pink/brown	white
Beef	red/brown	cream/ pale yellow
Pork	pink	white
Veal	pink	white

2. It should be moist but not dripping.
3. It should smell fresh.
4. Lean meat should have a marbled appearance.
5. It should be slightly springy to the touch.

Intended use

1. Allow for possible shrinkage during cooking when choosing a joint.
2. It is uneconomic to use expensive, lean joints of meat for stewing or casseroling.
3. As a general guide, allow about 100g of meat per person, unless it is for a dish such as risotto where vegetables, cereal grains, or pulses form a major part.

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The importance of milk in the diet

Milk is the single most complete food known to exist naturally. It is designed by nature to feed the offspring of mammals, (cows, goats, sheep, humans, etc.), so contains sufficient nutrients in the right proportions for the animal it was designed to feed. Milk is, however, deficient in ascorbic acid (vitamin C) and iron, containing only traces of these. Human babies are born with a supply of these in the body to last them for the first few months of life, until they can be provided by food.

The nutrients in milk are in a readily digestible form, and little is wasted during digestion. Milk is a valuable food not only for babies, but for people of all ages.

Nutrients in milk

Protein

Milk proteins are of a high biological value (see p. 3), and the chief ones are:

caseinogen
lactalbumin
lactoglobulin

Caseinogen accounts for about 80% of the protein in milk, and in fresh milk it is combined with calcium and phosphorus as **calcium caseinate**. If an acid is added to the milk, or if it is soured naturally by lactic acid bacteria, the casein coagulates and separates from the calcium and phosphorus. This happens in cheese making. During digestion, it is coagulated by rennin to form a clot (see p. 35).

Lactalbumin accounts for about 8% of the protein in milk, and **lactoglobulin** for about 3.5%. When milk is heated, they both coagulate and form a 'skin' on the surface of the milk. They are not coagulated by rennin in the stomach during digestion, or by acid.

Fat

The fat content of milk is often used as a guide to the quality of the milk, and may affect its price. By law, whole milk must contain a minimum of 3% fat and that produced by Channel Island and South Devon cows must contain a minimum of 4% fat.

The fat is present in the form of tiny globules or droplets, which are lighter than water, and rise to the surface to form a cream layer (unless the milk has been homogenized).

Milk fat contains both saturated and unsaturated fatty acids, in varying proportions, according to the feed given to the cow.

Milk fat is used in the production of butter (see p. 92) and cream (see p. 105).

Dietary guidelines encourage us to reduce our saturated fat intake, so there is an increasing demand for low-fat dairy products. Sales of skimmed and semi-skimmed milk (see p. 102), and low-fat yogurts, cheeses, creams, and spreads have increased, with many new products becoming available each year.

Carbohydrate

The only carbohydrate in milk is the disaccharide, lactose (see p. 9). Cow's milk contains about 5% lactose, whereas human milk contains just over 7%. Lactose is less sweet than sucrose, and is therefore not easy to detect. Lactic acid bacteria readily ferment lactose to lactic acid, thus causing the milk to go sour, and curdle.

Vitamins

Fat soluble Milk contains a relatively good supply of retinol (vitamin A). The amount varies according to the time of year. In the summer, when cows can graze on fresh grass, milk contains more vitamin A and carotene than in the winter. Skimmed milk contains less vitamin A as it is removed with the milk fat.

Milk contains more vitamin D in the summer, when the cows are exposed to sunlight for longer periods. It is not a rich source of this vitamin.

Water soluble Milk is an important source of riboflavin, but this is destroyed if the milk is left exposed to sunlight. Milk is a relatively good source of thiamin.

It is a poor source of ascorbic acid (vitamin C), and this is usually destroyed when the milk is heat treated.

Minerals

Milk is an excellent source of calcium, and milk and milk products are important suppliers of this mineral in the diet. Milk also contains a good supply of **phosphorus**, plus smaller amounts of **sodium, chlorine,** and **potassium.** Milk is a poor source of **iron.**

Two-thirds of the minerals in milk are combined with milk solids (e.g. calcium and phosphorus with caseinogen), and the rest are dissolved in water.

The effect of heat on the nutritional value of milk

Pasteurization causes a slight loss (up to 10%) of the thiamin, and a 25% loss of the vitamin C.

UHT and dried milk The nutrient losses are similar to those of pasteurized milk.

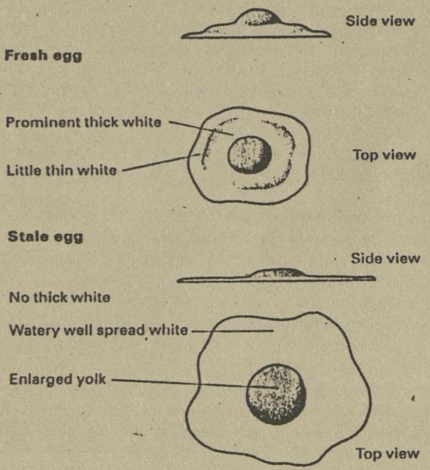
Sterilization leads to a loss of 20% of the thiamin and 60% of the vitamin C. The sugar lactose is partially caramelized and this accounts for some of the flavour and colour change.

Testing an egg for freshness

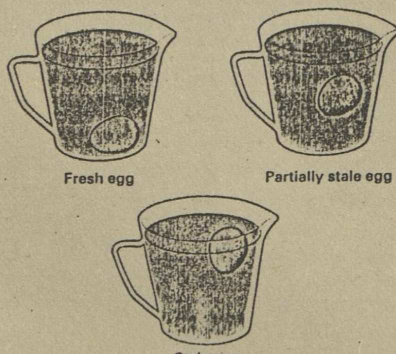
Before eggs are packed they are checked for defects by being passed over a strong light. This process is known as **candling** because wax candles were originally used as a light source.

As an egg gets older, several changes take place:

1 Water moves from the white into the yolk.
2 The yolk membranes weaken.
3 The thick white becomes thinner.
4 The size of the air space increases.
5 Moisture is lost through the shell.
6 Bacteria enter through the shell.
7 The bad smell of hydrogen sulphide is produced by the reaction of sulphur from the egg white and phosphoric acid in the yolk.
8 The egg eventually decomposes as bacteria contaminate the contents.



Eggs can be checked for freshness in the home by placing them in a jug of brine (2 tbsp salt dissolved in 575 ml water). If the egg sinks, it is fresh. If it floats on the surface, it is stale, because the air space has enlarged and water has evaporated from the egg, making it lighter.


Fresh egg
Partially stale egg
Stale egg

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Importance of eggs in the diet

Eggs are a good source of high biological value protein, and are easily digested by most people, especially when lightly cooked. As they are used in so many different ways in food preparation, they make a valuable contribution to the diet.

However, there is no carbohydrate in eggs, and the iron in the yolk may be unavailable to the body (see p. 23). They are also a poor source of calcium because it is concentrated in the egg shell which is not eaten.

The effect of heat on eggs

Ovalbumin in the egg white starts to coagulate at 60°C, until the whole white is solid and opaque. The proteins of the egg yolk start to coagulate at 70°C and continue until the yolk is dry and hard. If overcooked, the protein becomes tough and difficult to digest.

If an egg is boiled for some time, a green/black ring of **iron sulphide** forms around the yolk. This is due to the reaction of sulphur in the egg white with iron in the egg yolk, particularly in eggs that are not very fresh. This reaction can be partly prevented by cooling the egg rapidly as soon as it has been cooked.

If eggs are heated too quickly, the proteins will coagulate and shrink rapidly, causing any liquid that the egg contains to be squeezed out, and the protein to become tough. This is called **syneresis**.

Uses of eggs in food preparation

Eggs are used for a variety of processes in food preparation, and are very versatile. Their uses include:

1 **Trapping air** Both the egg white and the whole egg can trap air, because of the ability of ovalbumin to stretch (see p. 205).
This ability is utilized in:
Cake making Eggs are used as a raising agent.
Lightening mousses, soufflés, etc., as meringue or whole egg.
2 **Thickening** Eggs are used to thicken custards, sauces, soups, etc., because of the coagulation of the egg proteins.
3 **Emulsifying** Egg yolk contains lecithin which is an emulsifier and enables oil and

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Food Additives and Contaminants

Chemical food additives and food contaminants have been quite extensively studied, more so than most other chemicals that come into contact with our bodies—with good reason. Only carefully selected chemicals can prevent contamination and spoilage of food that has to be produced in great quantities, stored, and transported. Chemicals are also used for flavoring and appearance. Chemical contaminants may develop as a result of food processing procedures such as irradiation, cooking, pickling, or smoking. The trouble with the use of chemicals in food is that we are exposed to them constantly, repeatedly, and at low doses. For this reason it is difficult to ascertain from tests whether these chemicals can cause cancer, and therefore laboratory investigations rather than large population studies must be conducted to find out whether the chemicals are potentially hazardous.

Chemical food additives are divided into several groups. *Intentional* food additives are chemicals that are purposely added to food. Some of these definitely produce cancers in animals, but others do not produce such clear results. Thiourea[1] and butter yellow[2] produce cancers in animals and are no longer used in food. A very important antioxidant presently used in foods, butylated hydroxytoluene, is reported to enhance certain animal cancers[3] but inhibit some carcinogens.[4] Red No. 2 and Red No. 40 dyes have both been banned because they are not safe according to the Food and Drug Administration.

Cyclamate has not been shown to be carcinogenic in humans, but its metabolite does produce testicular atrophy (shrinking) in rats. Saccharin, another highly publicized intentional food additive, does produce bladder cancer in rats when comprising 5 percent or more in the diet,[5] but epidemiological studies show that saccharin does not pose a major cancer risk to man.[6] However, it is generally agreed that additional studies are needed concerning the effects of saccharin on man before conclusive statements can be made. Xylitol, a new sweetener compound, also has been reported to give rise to bladder cancer in mice and to adrenal cancer in rats.[7]

Nitrite is a most important food additive. Nitrites are used as meat preservatives to prevent botulism; they also add color to certain meats, especially bacon and hot dogs. Nitrites can react with other compounds to form potent carcinogens called nitrosamines.[8] When bacon is cooked, nitrosamines form. Look at the label of ingredients on your package of bacon or hot dogs—nitrites are probably listed. There is a low level of nitrites in our saliva and in some vegetables, but there is no information on whether these nitrites can be activated to form nitrosamines. Vitamin C, also found in vegetables, can inhibit the formation of nitrosamines and is usually added to meat cures. Some research has suggested that nitrite itself might be carcinogenic.[9]

A certain wine additive, diethylpyrocarbonate, interacts with alcohol to cause levels of 0.1 parts per billion of another strong carcinogen, urethan.[10] This chemical is now banned in many countries.

Unintentional food additives are those chemicals used to prepare or store the food product; small amounts of these chemicals subsequently, unintentionally, become part of the food. An example of this is trichloroethylene. Decaffeinated products were made by using trichloroethylene to extract the caffeine. Trichloroethylene was found to be a carcinogen and was removed from the market. Another example of unintentional contamination of food involves certain processes used to make the paraffin wax that lines many food containers. Carcinogens were formed during certain of these processes, and once discovered, these processes were discontinued. Pesticides like DDT, aldrin, and others produce liver cancer in mice and are probably carcinogenic in other species. It is important to realize that most pesticides get into our bodies and are stored in fat cells, since they are fat soluble. These pesticide-laden fat cells can then act as reservoirs to slowly, but constantly, release the pesticide into the bloodstream. Another chemical that is used in agriculture is DES (diethylstilbestrol). DES is used for cattle and has been found in trace amounts in foods derived from cattle. DES causes human cancer: cancer of the vagina in young women and cancer of the testicles in men whose mothers had taken DES. (Cancer of the testicles is rare, however, especially in this situation.) Keep in mind that a large amount of DES is needed to cause cancer, and only a small amount is in our food. But small amounts accumulate and do affect us.

Some food contaminants, like aflatoxin, which causes human liver cancer, are of natural origin. It is a product of a fungus, *Aspergillus flavus*, which grows mainly on peanut plants. Other fungal products have been implicated in human cancers, but these findings have not yet been substantiated. *Gyromita esculenta*, a common mushroom used in cooking, contains a compound called N-methyl-N-formylhydrazine, which is a most potent animal carcinogen.[11] Related chemicals in other mushroom types are now under investigation. There is no current information on whether cancer incidence is related to the amount of mushrooms eaten by people in different parts of the world.

Certain food processing techniques, such as smoking and charcoal broiling, are known to produce carcinogens.[12] Smoked food is associated with an increased incidence of gastric cancer in the Baltic states and Iceland. The carcinogens that result from charcoal broiling appear to come from the fat that drips from the meat and is burned, forming the carcinogen, which then rises with the smoke back up into the meat.[13] If the fat drippings were eliminated, the carcinogens would probably be eliminated also.

As yet there are no definite proven cases of human cancers directly related to food additives, but many authorities agree that additives and contaminants do account for a very small percentage of human cancers. Those chemicals implicated in animal cancers were removed from the market for the most part. However, nitrites are bothersome sources of carcinogens and should be avoided. It is altogether possible that the reduced incidence of gastric cancer in the United States is directly related to better methods of food preparation and smaller amounts of nitrites being used in foods with the advent of refrigeration. Also it seems that certain naturally occurring food components like aflatoxins do cause human cancer and should definitely be eliminated. And finally, think twice before you make a habit of eating a great many mushrooms.

Refrigerators

Refrigeration is important in food storage and in the prevention of food poisoning (see pp. 166-7).

Liquids called **refrigerants** are used to remove heat from the inside of the refrigerator. They are contained in tubes at the back of the unit.

There is growing concern about the effect of refrigerants on the environment. CFCs (chlorofluorocarbons) have traditionally been used as refrigerants, but they are now known to damage the protective ozone layer above the earth and so are being withdrawn. Research into suitable environmentally friendly refrigerants continues.

Temperature distribution

Domestic refrigerators are designed to keep the temperature inside below 7°C, although it varies in different areas of the cabinet. Some fridges have an ice box which is normally marked with a star rating (see p. 167) to indicate the length of time that frozen food may be stored in it. It is *not* designed to freeze food, only to store it once frozen.

The door shelves are the warmest part of the cabinet. The diagram below shows the types of food that should be stored in each part of a refrigerator.

Choosing a refrigerator

When deciding on which type and size of refrigerator to buy, the following points should be considered.

1 Size and capacity required.
2 Storage arrangements inside the refrigerator.
3 Space available in the kitchen.
4 Star rating for frozen food compartment.
5 Workmanship on the refrigerator and its finish.
6 Additional features, e.g. automatic defrosting, digital temperature display.
7 Amount of money available.

Many people find that a fridge/freezer (see p. 197) suits their requirements for cold storage without taking up too much space in the kitchen.

Care of a refrigerator

Defrosting

Moisture is drawn from the air and food inside a refrigerator, and it freezes on the surface of the ice box or heat-exchange panel. If this layer of ice becomes more than 6 mm thick, it will lower the efficiency of the refrigerator and should be removed by defrosting. Refrigerators can be defrosted in one of three ways.

Manual defrosting

The refrigerator should be switched off, and the food removed and kept in a cool place. The water collected from the melting ice is collected in a tray underneath the ice box, and removed. Once all the ice has gone, the cabinet should be washed out with a solution of bicarbonate of soda in water (1 tablespoon to 575 ml), which will not leave a smell. Once dry, the refrigerator can be refilled and reconnected.

Push-button defrosting

Some models have a button which when pressed stops the refrigeration process and allows the ice to melt. When this has occurred, the refrigeration process starts up again.

Automatic defrosting

Other models defrost automatically when the ice reaches a certain thickness, so that there is no need to check this, and food need not be removed.

It is important that the refrigerator should be kept clean and hygienic inside at all times.

Storing food in a refrigerator

It is advisable to wrap food before placing it in the refrigerator, because:

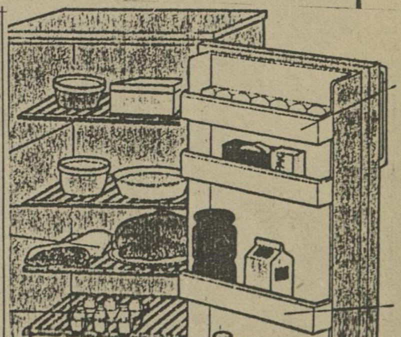
1 Food loses moisture as it cools down, so unwrapped food will dry out.
2 Some foods absorb odours while others give off odours, and this can spoil the flavour of the food.

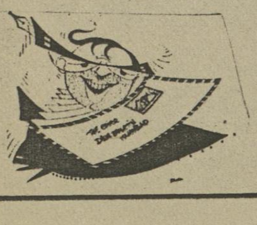
Some foods, e.g. meat and fish, should not be wrapped in plastic in the refrigerator as they tend to discolour and develop off flavours and odours without a layer of air surrounding them. Such foods should be stored in a glass or ceramic dish.

Freezers and fridge-freezers

The choice, care, and use of freezers are discussed on pp. 195-203. All fridge-freezers are required by law to have a label to indicate how much energy they use.

Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post-Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center at Healthcare, 30-Main Road, Samanabad, P. O. Box 4080, Lahore 54500. Tel. 042.746.8494, 759.3093 & 0342.758.0513. Email: smfaiq@hotmail.com Published regularly on first Monday of every month since 16 June 1997. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.





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BALANCED DIET, HEALTHY LIFE
DIETCARE

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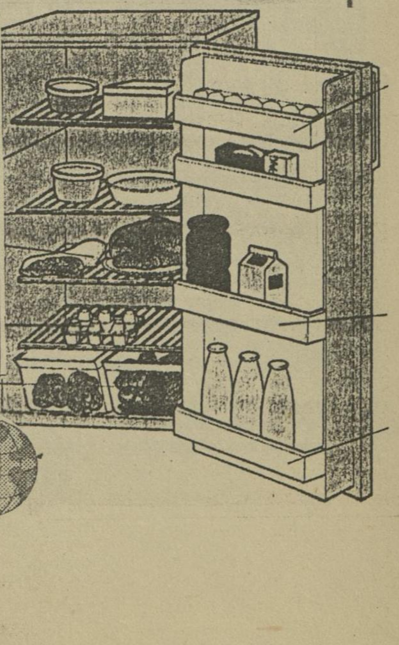


BALANCED DIET, HEALTHY LIFE
DIETCARE

Bulletin of
First DietCare Center

Vol. 6 No. 6 June 2003

The dark side of herbal medicines

EVERY year Pakistanis, spend millions of rupees on a wide variety of alternative therapies. Many often abandon the treatments of their regular doctors. 'Herbs' are back in vogue. Apart from acting as curative agent in therapies, they are used for decorative purposes, for manufacturing fragrances and cosmetic products and have culinary uses. About a decade back they had to some extent evaporated.

For as long as civilization has existed, herbs have been used for healing. It is said that about 80 per cent of medicines till the mid-9th century was derived from herbs. Many conventional medicines are derived from plants.

The West has also discovered powerful plant-derived drugs for heart disease (from Fox Glove plant's leaves), for cancer (from the Pacific Yew tree). Herbal medicine may take longer to work and the effects may be less dramatic at the outset. But it is said to be as potent as conventional drugs are. Remedies are taken in pill or capsule form, in the form of tea -obtained from dried plants, as oil to be consumed or applied fresh, or to be taken in ground or dried form. It depends, as prescribed by practitioners.

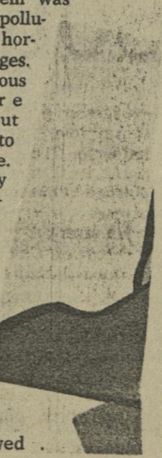
According to a WWF report, Pakistan has around ten major dawakhanas, fifty thousand registered tabibs and thousands of unregistered practitioners. Together, they administer herbal medicine worth millions of rupees.

Once, herbs were generally thought to be inexpensive and mild remedies for minor ailments such as a sore throat and cough. But today experts believe that herbal treatment could also be effective for serious maladies such as influenza, high cholesterol etc. One of the reasons for the popularity of herbal medicine is that they are still comparatively cheaper.

"Suffering from arthritis I had lost all hope of relief. I tried conventional medication, and even underwent treatment in America, but all in vain. When I came back to Pakistan I opted for herbal/plant derived drugs. It was a miracle! In a few weeks time, I was cured," says a 65 year old women who would rather not be named.

Tariq, also a beneficiary of herbal medicine, says that he had opted for therapy before, he had taken so many combinations of pills that he had lost count. "Their worst aspect part was their side-effects," he says. "Sometimes my feet would be so swollen that I would be unable to wear shoes. For months I would feel a tremor in my hands and couldn't write. I turned to herbal medicines and now the effects are gone."

Sabeen recently returned to Pakistan after a 15 years stay in the UK. She says, "My problem was acne from pollution and hormonal changes. I tried famous skincare brands, but found none to be effective. Later my friend suggested that I should try out a safe herbal range. I made the switch and positive results soon followed.



Now I can't think of life without herbal medicines".

But contrary to popular perceptions, not all herbal drugs are risk-free — a fact especially those using herbs to lose weight should keep in mind. A tabeeb who wishes to remain anonymous prescribes herbs to patients for problems ranging from a cold to sleep disorders to hepatitis and for liver ailments. But while many of his patients have obtained relief, there are those who who have complained of side-effects.

Only recently a man in his 30s was reported to have died suddenly. One of his friends disclosed that he had been taking 'herbal weight-loss products', and had taken a double dose of the 'natural' pills a few hours before his death. The friend, who was himself on the same drug stopped taking the medicine immediately.

In recent researches, western scientists say that there is reliable data on the safety and efficacy of herbal medicine. But experts say most herbs if abused could cause adverse side-effects. Syed Nawazish-e-Hussain, Assistant Professor, Department of Pharmacology, Punjab University, cautions that "all herbal medicines are not risk-free. "Since some of these are categorized as 'dietry supplements' they are not subject to the same safety standards as applied to conventional drugs", he says. "And when taken in high doses, some herbs can have dangerous consequences. Self-prescription is a big problem and one should never forget that different patients require different treatment according to need."

.... P:24

Unfortunately, misinformation abounds. Manufacturers are even allowed to make certain health claims—which have not been proven. One should beware of the herbal guide books available in health food stores. Many are written by herbalists or companies to promote their own products, and are not based on scientific scrutiny.

The Profesor says, "the manufacturers usually make blatantly false advertising claims. A company advertised a product promising to blast away some pounds, in a limited period those ugly pounds magically disappeared before your very eyes. Many manufacturers advertise in newspapers, on the internet, cable TV and so on. They make thousands of rupees but unfortunately in our country the authorities can't nab them. Many of the false products are not even investigated. Some companies even cite research to back these 'false claims'. But the bitter reality is that in many cases the medicine has not even been tested on animals before it was introduced in the market."

It is clear that herbs are being marketed and purchased as drugs without regulation. There is very little evidence about the efficacy of weightloss products that are found in plenty

From P:21

He further reveals that,"the West deals with the people of our land as 'experimental animals'.

A leading manufacturer recently launched a medicine named 'Silibum Maryanum' to cure liver disease. It was launched in Pakistan but has not been evaluated in clinical trials. Unfortunately no one has taken notice. In our country no system of checks and balances exists. Even local manufacturers use sub-standard food colours in soft drinks, medicated syrups etc——especially the colour red. Even the plant -derived medicines of the local manufacturers are based on so-called fore-bearer's formulas.

Advertisements on the internet are particularly dangerous since they are unregulated and unedited. The web offers 'prescription' drugs. Syed Nawazish-e-Hussain asks how can someone obtain a prescription drug without seeing a doctor? "There are lots of hazards involved in it", he concludes.

Prof. Dr Bashir Ahmed, Pharmacologist, Faculty of Pharmacy, Punjab University, says that a few years ago, the diet drugs Fenfluramine and Dexfenfluramine were removed from shelves in America after reports revealed them to cause potential fatal heart and lung damage. So the weight-conscious switched to herbal products in a big way. "But because one doesn't need a prescription for these diet aids and they haven't been banned, it does not mean they are effective or safe," he says." Some of these have a frighteningly wide range of potentially adverse side-effects. They make your stomach hurt and lead to dehydration.There is plenty of evidence to suggest that some of the ingredients in these products may be harmful, particularly if taken in large doses or over long periods of time," he continues.

"For instance Ephedra is known to have caused extreme side-effects and even death. Ephedra is the herb that contains Ephedrine (known by its Chinese name Ma-Huang, even a WWF report notes it as a cardiac stimulant).It is also found in many allergy and asthma drugs. Grown in Baluchistan, it is taken as an appetite suppressant and energy booster. It is said that it stimulates the central nervous system, speeds the metabolism and can cause blood pressure to soar, as well as heart palpitations and liver failure."

So why is such a potentially dangerous herb available in the market without so much as a warning label?

In addition, other hazards have been associated with dieter teas——Senna teas——which routinely contain laxative ingredients can deplete the body of important nutrients and eventually cause heart attacks. Dr Bashir says, Senna is also known as the Locust plant and Cassia. It is a herbal laxative. It stimulates the colon and leads to heart problems such as cardiac arhythmia.

Some people can become addicted to it and it can also cause fainting, loss of bowel function. Some other risky herbs include the Lobelia and Comfrey Root."

"We have a responsibility to bring into force a law for consumer protection. It is necessary to consider warning labels and dosage limits on risky-drugs products," he concludes.

The Pakistan Medical Research Council have been trying to establish a health research system in Pakistan. Let's hope for a positive outcome. It is clear that herbs are being marketed and purchased as drugs without regulation as drugs. Indeed there's very little evidence that any of the weight loss products (imported or locally manufactured) will help you lose-weight unless you burn a lot of calories by walking and running. There's a herb that's been proven to induce weight loss.

One should bear in mind that herbal remedies are not miracle drugs. Always heed the warning—if it is there on the label. In general remember that herbs shouldn't be taken by children and by pregnant or nursing women. It's a good idea to inform your doctor of all the medications and supplements you take, including herbs. Always consult qualified tabeebs and avoid experimentation. And always remember that 'miracle weight loss' products are a waste of money. ■

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The importance of meat in the diet

Meat is an important food as it is a good source of protein, B vitamins, iron, and zinc. It is a main source of high biological value protein for many people. The nutritional value of lean meat of most types is on average:

protein	20%
fat	5%
minerals	1%
water	74%

Modern techniques of breeding and feeding have been adopted by British livestock farmers. These produce meat with a lower fat content than traditional methods. Pressure from health experts and consumers has increased demand for meat with a lower fat content, so all farms now produce animals with less fat, and butchers prepare lean cuts of meat by removing some or all of the fat.

The minerals found in meat include iron and zinc. Meat also contains B vitamins in useful quantities, and pork is a particularly good source of thiamin.

Both the protein and fat in meat are readily digested and absorbed in the body.

Colour of meat

The colour of meat is mainly due to the presence of **myoglobin**, which is a purple/red tissue protein, and **haemoglobin** from the blood, some of which is left in the meat after slaughter.

In a living animal, haemoglobin takes oxygen to the muscles, and myoglobin holds it there, so that the muscle can work. There is therefore more myoglobin in well-used muscles such as the heart and shin, and in older animals, and the colour of the meat is darker in both cases.

When oxygen is taken to the tissues, the myoglobin is converted to **oxymyoglobin** which is bright red. After slaughter, the meat remains dark red until it is cut and exposed to the oxygen in the air, when it becomes bright red.

When fresh meat is stored for a few days, its colour changes to a brown/red, due to the formation of **metmyoglobin**. This does not seriously affect its palatability when cooked. If storage is continued, the meat may become green/brown through the effects of enzymes and bacteria. This will spoil the palatability.

BALANCED DIET, HEALTHY LIFE

DIETCARE

Bulletin of
First DietCare Center

Vol. 6 No. 7

July 2003

Powerful Anorectic Agent Helps Overcome Genetic Link to Obesity

For the millions of Americans who are significantly overweight (more than 30 lbs. of excess body weight and/or a BMI [body mass index] greater than 30) there is simply no longer any way to deny the genetic link to obesity. That's why ordinary diet pills and so-called "fat magnets" (if they work at all) so often fail to help the significantly overweight. The genetic link to obesity also means that repeated diet failure and chronic overweight is not your fault. Unless a weight-control compound addresses the genetic factor – and helps you overcome your genetic predisposition to obesity – your attempts at weight loss become no more than an exercise in futility (and a waste of time and money).

But now there's Anorex™ – the first weight-control compound designed to mitigate the profound effect that variations in the human genetic code have on the storage, use, and disposition of body fat. Anorex™ is an extremely powerful anorectic agent and is not intended for use by the casual dieter who is merely attempting to shed five or ten "vanity" pounds. However, if substantial,excess body fat is adversely affecting your health and self-esteem, then it's time for you to discover Anorex™ – the first comprehensive weight-loss compound designed specifically to overcome your genetic predisposition.

Anorex™: The Result of an Extraordinary Collaboration

Anorex™ (or more correctly, its patent-protected core compound, Leptoprin™) is the result of an extraordinary collaborative effort between Dr. Daniel B. Mowrey, Director of Scientific Affairs, Klein-Becker usa, Provo, Utah, and Dr. Timothy J. Maher, Division of Pharmaceutical Sciences, Massachusetts College of Pharmacy and Health Sciences, Boston, Massachusetts. Though working independently, both doctors were keenly aware of the growing body of evidence linking obesity to certain genetic "markers." When Drs. Mowrey and Maher met for the first time in September of 1998, they discovered each had access to compatible patents for variant methods of regulating obesity. As they familiarized themselves with each others' work, it became clear that combining the patented formulations could overcome genetic anomalies responsible for significant overweight. In fact, a recent report ("The Human Obesity Gene Map: The 1999 Update") published in *Obesity Research*, the official journal for the North American Association for the Study of Obesity, disclosed, "The number of genes and other markers associated or linked with human obesity phenotypes continues to expand and now reaches well over 200" (Vol. 8 No. 1 Jan. 2000, p.105). For example, gene FABP2, located at 4q28-q31, impacts abdominal fat, body mass index, and fat percentage – while others are more specific, such as gene INS, located at 11p15.5, which influences waist-to-hip ratios in obese women (pp.99-100).

Anorex™ Helps Overcome Genetic Link to Obesity

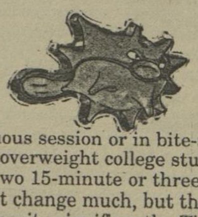
Anorex™ is the first product designed specifically for the significantly overweight by helping them overcome their genetic link to obesity. **First**, significantly overweight people have a genetically based tendency to store excess dietary calories as body fat. Anorex™ helps overcome this tendency by effectively increasing the body's ability to destroy calories in specialized "wasting cycles" within fat, muscle, liver, and other body cells. **Second**, Anorex™ dramatically interferes with the process of converting calories to fat. **Third**, Anorex™ exerts a profound "lipolytic" action – it "mobilizes" stored fat, moving it out of the fat cell and thereby reducing the size of the fat cell mass. **Fourth**, Anorex™ inhibits the creation of new fat cells (yes, scientists now know that we create new fat cells throughout life). **Fifth**, Anorex™ increases the special process (called apoptosis) in the body that results in the destruction of immature fat cells before they become bloated with fat. **Sixth**, Anorex™ is especially effective in prolonging all of these actions in the body for the longest possible time. In short, Anorex™ is such a breakthrough discovery for the significantly overweight because Anorex™ aids in the defeat of destructive genetic influences on the cellular regulation and coordination of dietary calories: their intake, their conversion to body fat, and their removal from body fat stores. In other words, Anorex™ takes away "pre-programmed genetic failure" and gives the significantly overweight control over their lives once again.

DID YOU KNOW?

ADDING SOME "good" fats to a reduced-calorie diet can make it easier to lose and maintain weight over time, according to a new study. After six months, study participants consuming a low-fat diet and those eating a moderate-fat diet had lost similar amounts of weight. After a year, the moderation group had maintained a loss of about nine pounds. But those who'd followed the stricter plan had gained back all the weight they'd lost — plus six pounds. A Mediterranean diet — using olive oil rather than nonfat dressings on salads, for example — can make weight loss menus both healthful and satisfying, say the researchers. The report appears in October's International Journal of Obesity.

* * *

A new report says that you can exercise "your way" — in one continuous session or in bite-size chunks — and still reap results. During a 12-week study, one group of overweight college students stayed sedentary. Others exercised for 30 minutes continuously, or in two 15-minute or three 10-minute segments, three to five days a week. The control group didn't change much, but the exercisers all lost similar amounts of weight and increased their aerobic capacity significantly. The report appears in October's Journal of the American College of Nutrition.



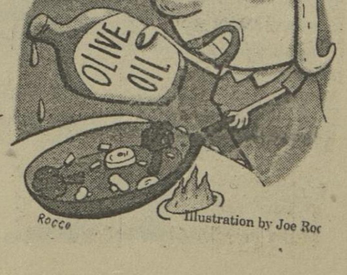


Illustration by Joe Roc

Chief Editor, **Dr. Sultan Mahmood** (PhD Nutrition Poland, Post Doc Denmark & USA) published monthly 'FDC Bulletin' from First Dietcare Center, 183-A, New Chouburji Park, Lahore 54500. Tel. 042.746.8494 . Email: smfaiq@hotmail.com. Published regularly on first Monday of every month since 16 June 1997 except July 2000 to Feb 2002 when Chief Editor was abroad. The objective of this bulletin is a volunteer supply of handy scientific information to family physicians and relevant medical circles of Pakistan for the sake of updating their skills in diet and nutrition as an aid in treating the problems of general public so that, not only the side effects of the medicines may be minimized but also making prescriptions more effective through dietary advices. It is, however, understood that recommendations contained in bulletin are not alternative of medical advice.

"Being Fat Is Not Your Fault!"

Finally, Confirmation of Genetic Link to Obesity Offers New Hope for the Chronically Overweight

Can't lose weight? Well. you're not alone. But. if you're one of the millions of significantly overweight men and women plagued by stubborn pounds of excess fat. flab and cellulite, there's finally some great news for you. Science has discovered more than 200 genes and other genetic markers responsible for human obesity.

Scientists Use Genetic Research to Create New Weight-Loss "Super Pills"

Why is the discovery of a genetic predisposition for increasing (as well as retaining) body fat such great news for you? The answer is simple. At last. researchers can develop compounds that both compensate for and help overcome the devastation and hopelessness of obesity's genetic link... creating advanced weight-control formulations capable of mitigating the profound effect that variations in the human genetic code have on the storage. use. and distribution of body fat. The first. but surely not the last. of these new "super pills" is called Anorex™.

> **"Because they help overcome genetic implications of obesity, these new anorectic compounds offer a new ray of hope to the significantly overweight."**
>
> Dr. Daniel B. Mowrey
> Director of Scientific Affairs, Klein-Becker usa

Breakthrough Compound Helps Overcome Genetically Programmed Causes Of Diet Failure

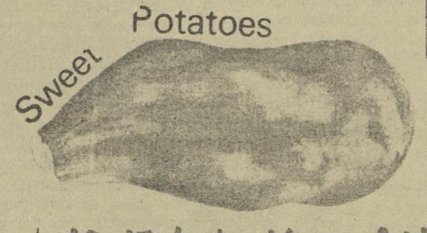
Anorex™ helps overcome the genetic "defects" responsible for most diet failure. Anorex™ effectively increases the body's ability to destroy calories in specialized "wasting cycles" within fat. muscle. and other cells.

Anorex™ dramatically interferes with the conversion of calories to stored fat, exerting a profound "lipolytic" action as it "mobilizes" stored fat. moving it out of the fat cell and thereby reducing the size of the fat cell mass.

Finally. Anorex™ inhibits the creation of new fat cells (yes. scientists now know we create new fat cells throughout life). as it increases the special body process (apoptosis) that results in the destruction of immature fat cells before they become bloated with fat. In other words. Anorex™ helps take away "pre-programmed genetic failure." giving the significantly overweight control over their lives once again. But Anorex™ is not for everyone.

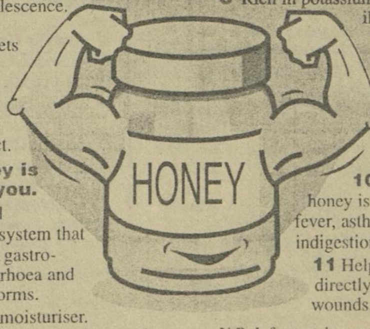
New Super Pill Too Powerful For "Casual Dieter"

Dr. Daniel B. Mowrey. Director of Scientific Affairs at Klein-Becker usa (the pill's developer), cautions: "Anorex™ is not for everyone. [Anorex™] is much too powerful for the 'casual dieter' and is intended for the 'significantly' overweight only... those persons who are more than 30 lbs. overweight or who have a BMI [Body Mass Index] greater than 30."



HONEY: the King of Natural Healers

There are many varieties of honey, including cold-press honey, raw unfiltered honey and natural honey. Cold-press is obtained without heating, and therefore retains many good nutrients. Unfiltered honey contains pollen, which is rich in protein, free and bound amino acids and Vitamin B12. Pollen (the food given to young bees) increases energy and aids weight gain and recovery during convalescence. Raw honey contains pellets and royal jelly; both are excellent for the digestive tract.



Why honey is good for you.

1 A powerful antibacterial system that helps control gastro-enteritis, diarrhoea and eliminates worms.

2 Excellent moisturiser. Perfect for eliminating dryness from skin, lungs and throat, thereby controlling coughs, colds and flu.

3 Harmonises liver functions. regulates high blood pressure, treats stomach ulcers.

4 A tranquiliser and a sleep-inducing sedative.

5 Source of boron (trace element), which facilitates the production of estrogens and helps in menstrual problems.

6 Source of silicon, which is vital for calcium absorption.

7 Purges toxic metabolites from the body.

8 Rich in potassium; balances the ill-effects of salt-rich foods.

9 Prolonged use helps reduce cancer and lowers stress and anxiety levels.

10 Unfiltered honey is excellent for hay fever, asthma and indigestion.

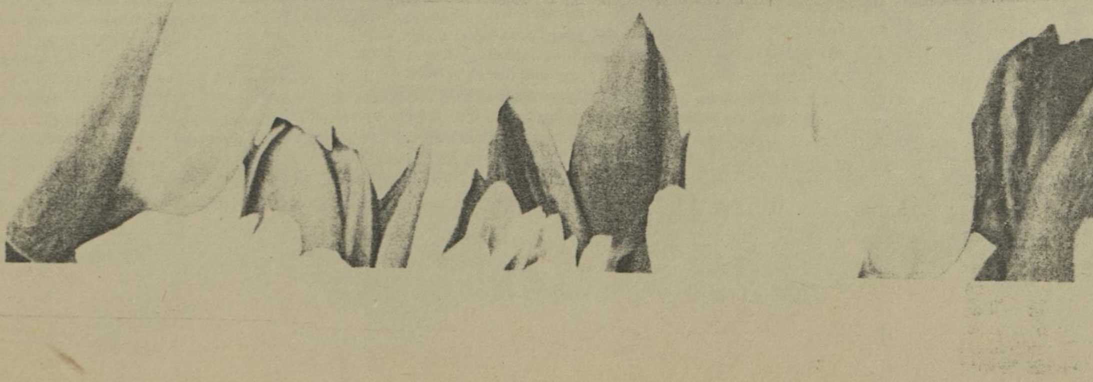
11 Helps healing when directly applied on wounds, burns and cuts.

N.B. Infants under one year should not be given raw honey, as it may contain the clostridium botulinum bacteria, which is fatal. However, children need honey for its multi-beneficial effects. ■

BALANCED DIET, HEALTHY LIFE
DIETCARE

Bulletin of
First DietCare Center

Vol. 6 No. 8 August 2003



Newsday Photo / Tony Jerome

Even modest changes in diet can improve health; ingredients like those in the bean-bell pepper salad recipe below add fiber and little fat.

Dieting Away Risk for Diabetes

YOU KNOW cutting back on fat and getting more exercise helps you lose weight, but now research proves this low-tech combination will reduce your chances of developing diabetes as well.

In a government-financed study of more than 3,200 men and women with a likelihood of developing diabetes, those who cut their fat intake, increased their exercise regimen and lost a modest amount of weight with the aid of counselors and coaches had the lowest incidence of diabetes during the three years of the program. They reduced their risk by more than 50 percent.

Diabetes is more common as you age. Having a relative with diabetes, and being an African-American, a Hispanic or an American Indian puts you at greater risk. So does being overweight. Although you can't change your genetic factors, you can change lifestyle ones, the experts say.

And, "it's not onerous," said Dr. Andrew Greenberg, an obesity expert at the Human Nutrition Research Center on Aging at Tufts University in Boston.

"This isn't difficult to do. You don't have to join a health club. The exercise component is moderate — walking for 30 minutes a day. The fat component [reducing fat intake to 25 percent of calories] can be done if you consistently eliminate one ice cream and one dessert [a day] from your diet. As for weight loss, the volunteers lost about 5 to 7 percent of their body weight," Greenberg said.

The people in the study were overweight to obese, according to Greenberg. "Obesity is associated with 80 percent of people who develop diabetes."

Although no one is sure how much weight you should lose, you don't have to get to an ideal weight to make a difference in your health.

LOSING IT

"Many people at risk for diabetes are baby boomers. If they don't look as they did in their high school yearbooks, they're discouraged," said Althea Zanecosky, a spokeswoman for the American Dietetics Association and a registered dietitian in Philadelphia.

"Even reducing one dress size for women or one pants size for men can make a healthful difference," she said.

But you may find it challenging to lose even a pound a week when you, unlike the volunteers, don't have counselors advising you.

Here are some tips to start:

- Keep a food diary for a week so you'll know what drives you to overeat. "Perhaps you have certain foods that get you into trouble. Maybe you eat premium, high-fat ice cream at night," Zanecosky said.
- Eat your favorite foods in smaller amounts. "Put ice cream into a bowl; don't eat out of the carton. Or count out 15 potato chips. If that isn't the solution, look for substitutions, such as pretzels for chips," she said.
- Add fruits, vegetables and fiber to your meals. "Clearly, a balanced diet with fruits, vegetables, unprocessed grains is useful in preventing the onset of diabetes, according to several studies," Greenberg said.
- Fiber, as in whole grains and legumes, helps control your cholesterol levels and reduces fat absorption in your body, according to Zanecosky.
- Fruits and vegetables, which contain fiber, vitamins and minerals, fill you up for very few calories.

"If we eat a salad at lunch and dinner, with diverse vegetables and limited amounts of dressing, we'd be doing well," Greenberg said.

Get the Fat Out

IF YOU ELIMINATE just one of the following every day, you'll get closer to your goal of restricting your fat intake to 25 percent of the total calories you eat.

- One half-cup serving of premium ice cream, for a savings of 17 to 24 grams of fat.
- One tablespoon butter, at 11.4 grams of fat.
- One tablespoon olive oil, at 13.5 grams of fat.
- One tablespoon mayonnaise, at 11 grams of fat.
- Ten macadamia nuts, at 22 grams of fat.

— Bev Bennett

Bean and Bell Pepper Salad

1 (15-ounce) can pinto beans, drained and rinsed
1 medium yellow bell pepper, cored, seeded and chopped
1 hot red chile, such as Fresno or Serrano, cored, seeded and minced
1 large tomato, cored and diced
2 tablespoons each: minced chives and Italian parsley
1/2 teaspoon ground cumin
1/2 teaspoon salt
1/4 teaspoon pepper
1 tablespoon mild-tasting white wine vinegar

1. In a salad bowl, combine beans, pepper, chile, tomato, chives and parsley.

2. In a cup, stir together cumin, salt, pepper and vinegar. Pour over salad. Toss gently, but well. Makes 4 servings.

Nutritional analysis for each serving: 100 calories; 1 g. fat; 4.5 g. protein; 29 g. carbohydrates; 637.5 mg. sodium and 7 g. dietary fiber. ■

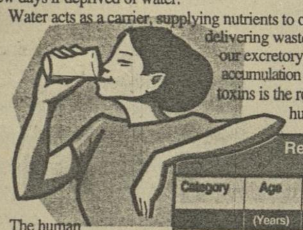
Bev Bennett is a regular contributor to Newsday.

The Harbinger of Good Health

By Professor Dr. [illegible] Ali

We often underestimate water as a non-essential component of our diet. Yet, although the human body can sustain deficiencies of other nutrients for weeks, months or even years, we are unable to survive for more than a few days if deprived of water.

Water acts as a carrier, supplying nutrients to our cells and delivering waste products to our excretory organs (the accumulation of unwanted toxins is the root cause of human disease).



The human body comprises 45 to 60 % of water, the ratio decreasing with age. Infants have the highest, and the elderly the lowest amount of water in their tissue.

Your daily recommended intake of water varies according to your lifestyle, diet and the weather conditions you live under. Above average physical activity, a salty, rich diet and a hot, dry environment needs a higher intake.

Feeling thirsty is a poor indication of dehydration; for example, children and the elderly do not feel thirsty, even with symptoms of dehydration (fatigue, headache, nausea, dizziness, lack of appetite and muscular pain).

Ideally, you should drink water in small portions throughout the day. Adults usually require two to three litres, and children 1.5 to 2 litres of fluid every day.

To lead a healthy life, drink sufficient amounts of un-contaminated water which contains adequate amounts of minerals.

Water is a carrier of bacteria, and water-borne diseases are common in Pakistan. Make sure you boil drinking water for 15 minutes, cool it and then store it in a covered receptacle with the lid shut tight. ■

Recommended daily water allowance for children and adults

Category	Age	Weight		Energy Needs	Water Needs	
	(Years)	(lb)	(Kg)	(kcal)	(ml)	(8 oz cup)
Infant	0.0-0.5 0.5-1.0	13 20	69	650 850	975 1275	4.1 5.4
Male	25-50	174	79	2,900	2,90	12.30
Female	25-50	138	63	2,200	2,200	9.4
Pregnant				2,500	2,500	10.8
Lactating				2,700	3,450	14.7

General composition of water supplied via taps

Mineral	Mg/l
Calcium	45-60
Magnesium	4-10
Sodium	10-20
Sulfate	5-10
Fluoride	0.3-0.5
Carbonates/ Bicarbonates	90-120
Total	**200-280**

Rivers, springs, wells, the sea and all other sources differ in mineral content.

Water also provides certain electrolytes, necessary to maintain your ion balance.

Your daily water ledger

WATER IN	
Source	Amount (ml)
Fluids	1,500
Water in foods	850
Metabolic water	250
Total	**2,600**
WATER OUT	
Skin	700
Lungs	350
Kidneys	1,400
Faeces	150
Total	**2,600**

Nutritional FACTS

Food	Water content %
Fruits/ vegetables	70-95
Milk	87
Cooked cereals	80-88
Fish and shellfish	60-86
Cottage cheese	79
Meat and poultry	40-75
Eggs	74
Cooked beans	69
Hard cheese	39
Bread	36
Butter	16
Crackers	2.6
Nuts	2.5

First Dietcare Centre

Under the Guidance of American Dietetic Association (ADA), USA
American Award ABI Laureate

You are what you eat

WASHINGTON: In a study that shows more than ever you are what you eat, US scientists said on Friday they had changed the coat colours of baby mice simply by altering their mothers' diets.

The study shows that common nutrients can influence which genes turn on and off in a developing fetus, and help explain some of the factors that decide which genes "express" and which remain silent.

Writing in Friday's issue of the journal Molecular and Cellular Biology, the scientists at Duke University Medical Center said they changed the colour of baby mouse fur by feeding pregnant mice four supplements — vitamin B12, folic acid, choline and betaine.

Mice given the four supplements gave birth to babies predominantly with brown coats. Pregnant mice not fed the supplements gave birth mostly to babies with yellow coats.

Careful study showed the extra nutrients turned down expression of a gene called Agouti, which affects fur colour.

"We have long known that maternal nutrition profoundly impacts disease susceptibility in their offspring, but we never understood the cause-and-effect link," said Randy Jirtle, a professor of radiation oncology at Duke who directed the study.

"For the first time ever, we have shown precisely how nutritional supplementation to the mother can permanently alter gene expression in her offspring without altering the genes themselves," he said in a statement.

The findings have not been shown in humans, but the researchers said there is much support for the idea that nutrition can affect gene expression in people.

Several studies have shown, for instance, that women who eat a poor diet while pregnant have children who grow up with a tendency to diabetes and heart disease.

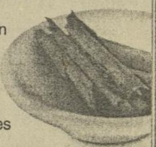
OBESITY, DIABETES LINK: This study could help explain that. The Agouti gene not only affects coat colour, but also metabolic factors involved in diabetes and heart disease.—Reuters

BALANCED DIET, HEALTHY LIFE
DIETCARE

Cinnamon, Cinnamon!

Cinnamon reminds me of the delectable apple pie we used to bake in our spic and span school kitchen…the sweet, spicy and woody aroma exuding the atmosphere, as you watched the impeccable Mrs. Cross (our cookery teacher) delicately fingering the savoury creation. Each spice perhaps brings its own association – and of course, loads of memories! But cinnamon has more to it.

Finding cinnamon was a primary motive of world exploration in the 15th and the 16th centuries. Egyptians imported it from China in 2000 BC. Romans believed it was sacred, and Nero burned a year's supply at the funeral of his wife!



Cinnamon is the dried bark of various laurel trees in the *cinnamomum* family. Cinnamon sticks are made from long pieces of bark, which are rolled, pressed and dried. True cinnamon is native to Sri Lanka, but is also grown in Vietnam, China, Indonesia and Central America.

Ground cinnamon is perhaps the most common baking spice, the world over. It is used in cakes, cookies and deserts, meat, vegetable and rice dishes, fruit, pickles and hot beverages. Cinnamon is a must in Middle Eastern chicken and lamb dishes, and is happily paired with the American apple pie, a fruit-and-cereal breakfast, and chocolate deserts and drinks. And what's more - soak it in green tea, and you get a perfect digestive aid for monsoon malaise!

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Bulletin of
First DietCare Center

Vol. 6 No. 9 September 2003 Page 33

EAT RIGHT WITHOUT THINKING

The real secret to smart eating? Good habits. Here are 20 you should have listening to some experts talk, you'd think healthy eating was more complicated than the arterial map of Larry King's chest. Carbohydrate-to-protein ratios.

PHYTOCHEMICALS.

Antioxidants. It's enough to make you nostalgic for high-school trigonometry class.

But don't get out the slide rule just yet: We have an easier way to improve what you eat. Adopt some of the following smart habits. These 20 simple tactics--if you stick to them regularly--will help you get more of the stuff you need into your diet while eliminating the stuff you don't. The best part? Before long you'll be dining like a nutrition expert, without even thinking about it.

At breakfast, put coffee in your milk instead of milk in your coffee.

Fill your mug to the rim with skim milk first thing in the morning. Drink it down until all that's left is the amount you'd normally add to your coffee; then pour your java on top. You just took in 25 percent of the vitamin D you need every day, and 30 percent of the calcium.

TAKE YOUR VITAMINS EVERY MORNING.

Study by study, evidence is mounting that a standard multivitamin fills enough of the gaps in your diet to make a real difference. For example, a recent study at the Fred Hutchinson Cancer Research Institute in Seattle showed that people who took a multivitamin supplement and 200 I.U. of vitamin E for 10 years were half as likely to get colon cancer.

DRINK TWO GLASSES OF WATER BEFORE EVERY MEAL.

This will do two things: keep you hydrated and make you eat a little less. A Dutch study showed that drinking two glasses of water can make you feel less hungry, possibly reducing your food intake and aiding weight loss.

Always order your pizza with double tomato sauce and light cheese. Men who eat a lot of tomato products tend to have less prostate cancer probably because tomatoes are a rich source of lycopene, a type of carotenoid that's believed to cut your risk of cancer. If you double the sauce on your pizza, you get double the lycopene. Reducing the mozzarella by just one-third (you won't miss it) will save you 20 grams of fat. That's as much as in a McDonald's Quarter-Pounder.

Always order your sandwiches with double tomato slices.

Another chance for a healthy dose of lycopene.

Pile onions on everything. Research has revealed that onions are so healthful-they're a top source of heart savers called flavonoids-that it's practically your duty to eat them lavishly on hot dogs, pizza, burgers, and sandwiches. And speaking of junk food...

Whenever you eat fast food, drink two glasses of water afterward. Big Macs, subs, fries, and pepperoni pizza are all loaded with fat and sodium, which can be hellish for your heart. You can't do much about the fat once you've eaten it, but you can flush away some of the excess sodium by drinking plenty of fluid afterward, says Tina Ruggiero, R.D., a New York City dietitian.

When the waitress asks what you want to drink, always say iced tea. The more we learn about tea, the more healthful it looks. A recent U.S. Department of Agriculture study found that a serving of black tea had more antioxidants--crucial to your body's defense against heart disease, cancer, and even wrinkles--than a serving of broccoli or carrots.

Have an afternoon snack every day at 3 o'clock.

A nutritional boost between lunch and dinner wards off fatigue and keeps you from overindulging later, says Keith Ayoob, Ed.D., R.D., director of the nutrition clinic at the Albert Einstein College of Medicine's Rose F. Kennedy Center. Just don't scarf down a candy bar. Try yogurt and fruit, crackers and cheese, or eat an egg (hard-boiled), an apple, and a thirst-quencher like bottled water. All of these foods will give you long-lasting energy.

Always leave the skin on your fruit. If you peel apples or pears, you're throwing away heavy-duty nutrients and fiber. Same goes for potatoes. Go ahead and peel oranges, but leave as much of the fibrous white skin under the rind as you care to eat--it's loaded with flavonoids. Ditto for the white stem that runs up the middle.

Put a bottle of water in the office freezer every night before you leave work. You already know that you should drink eight glasses of water a day, but how are you supposed to do it? Fill a half-gallon bottle in the morning, and make sure

See on the back...

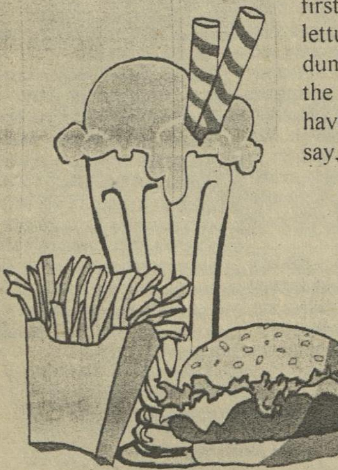
Continueed.... Eat Right

you've downed it all by the time you go home. If you like your water cold and you have access to a refrigerator, fill the bottle partially the night before and stick it in the freezer. Next morning, fill it the rest of the way. You'll have ice-cold water all day.

Whenever you buy grapefruit, go for red instead of white.Remember lycopene, that stuff in tomatoes that may fight prostate cancer? It's what makes tomatoes red. And it's responsible for the color in ruby red grapefruit. (Watermelon and guava also have some.)

EAT SALMON EVERY WEDNESDAY.

Actually, the day doesn't matter; the important thing is to have it once a week. Salmon is a rich source of omega-3 fatty acids, a type of fat most experts say we don't get enough of. Omega-3s seem to keep the heart from going into failure from arrhythmia--men who eat fish once a week have fewer heart attacks-and they may even ward off depression. A weekly serving of salmon should supply the amount of omega-3 fats you need.



Always wash your meat.

Here's an easy way to cut the fat content of your secret chili recipe: As soon as you finish browning the ground beef, pour it into a dish covered with a double thickness of paper towels. Then put another paper towel on top and blot the grease. If you want to remove even more fat, dump the beef into a colander and rinse it with hot (but not boiling) water. The water will wash away fat and cholesterol. Using these methods together can cut 50 percent of the meat's fat content.

Whenever you have salad, keep the dressing on the side. Here's the drill: Dip your fork in the dressing first, then spear a piece of lettuce, then eat it. Sound dumb? In fact, it's one of the smartest habits you can have. Four tablespoons of, say, honey-mustard dressing can have 60 grams of fat nearly an entire day's worth for an average guy.

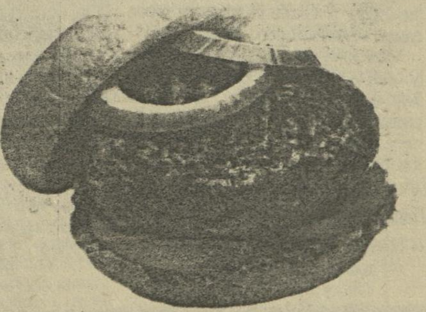
Whenever you eat broccoli, put a little margarine, olive oil, or cheese sauce on it. This is our kind of nutrition advice. Broccoli is a rich source of beta-carotene--one of the major antioxidants your body needs. But beta-carotene is fat-soluble, which means it has to hitch a ride on fat molecules to make the trip through your intestinal wall. Without a little fat in the mix, your body won't absorb nearly as much beta-carotene.

ALWAYS HAVE SECONDS ON VEGETABLES.

If we had to pick one food that represents the best insurance for long-term good health, vegetables would be it. Your daily goal: Three servings minimum. A serving, by the way, is 1/2 cup. Think of a tennis ball--it's about half a cup in volume.

DO A FAT ANALYSIS BEFORE EVERY MEAL.

It's tempting to go fat-free at breakfast and lunch so you can indulge in a high-fat dinner. Wrong. Studies show that, for several hours after you eat a meal with 50 to 80 grams of fat, your blood vessels are less elastic and your blood-clotting factors rise dramatically. William Castelli, M.D., director of the Framingham Cardiovascular Institute, says, "The immediate cause of most heart attacks is the last fatty meal." Spread your fat intake over the whole day.



ALWAYS EAT (A LITTLE) DESSERT.

Here's why: Sweets such as cookies and low-fat ice-cream bars signal your brain that the meal is over. Without them, you might not feel satiated--which might leave you prowling the kitchen all night for something to satisfy your sugar jones.

Eat a bowl of dry cereal every night before you go to bed. A low-fat, low-calorie carbohydrate snack eaten 30 minutes before bed will help make you sleepy, says Judith Wurtman, Ph.D., of the Massachusetts Institute of Technology. The nutrition bonus? Cereal is one of the easiest ways to reduce your fiber deficit. (Most men eat only half the 25 to 35 grams of fiber they need daily.) So pick a cereal that has at least 5 grams of fiber per serving.

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Bulletin of
First DietCare Center

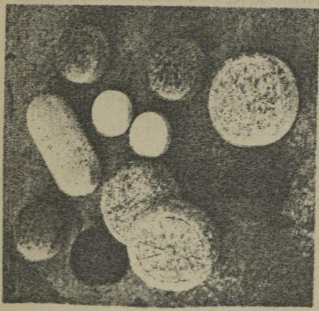
Vol. 6 No. 10 October 2003 Page 37

Vitamin vitality

Adequate nutrition is essential for our health. It is an important factor in preserving life, promoting growth, maintaining health and resisting diseases. A well nourished child has good growth, develops healthy skin, bright eyes, shiny hair and is generally active and alert. He or she eats well, plays and enjoys sound sleep. A great deal also depends on his or her social skills and environment, but nutrition plays a major role in good health and an increased life span.

The fact that nutrition cannot be maintained in animal receiving diets containing only purified protein, carbohydrates, lipids and minerals was recognized at least 30 years before the existence of substance known as "citamin" was actually demonstrated.

In 1871, Dumus became the first scientist to note that individuals fed on purified proteins, carbohydrates, lipid (fats) and minerals did not maintain good health. Lunin, in 1880, reported similar findings in animal experiments. But he found that addition of milk in their diet restored them to normal. He expressed the opinion that milk contained some unknown substance required for maintenance of normal health.



First
Dietcare
Centre

In 1911-12 the scientist Funk isolated a crystalline substance from rice polishing which could prevent or cure poly neuritis in pigeons. Chemically it was found to be an "amine" and it was vital to life, so he named it "vitamin".

Despite the accumulation of vast knowledge, there is still no complete definition of vitamin. They are highly specific organic substances that must be obtained pre-formed or as pro vitamin. They don't furnish energy value and are required in small amounts, but are absolutely essential for a normal healthy life.

The generation of energy living cells not only need large particles but also vitamins because they act as cofactors (helpers) in each and every process; they make things work faster. To a large extent, vitamins are mainly responsible for our health, growth and specially in delaying the process of ageing.

Two focal categories of vitamins are known: fat soluble and water soluble. Here we will discuss only fat soluble vitamins because fat soluble vitamins (A,D,E,K) are stored in the body, especially in the liver. Since only a minute amount is required daily, and it can't be excreted out of the body, if taken in excess it can cause serious abnormalities.

Vitamin A was used therapeutically about 3600 years ago. The whole liver of an ox dipped in honey and prescribed by Pluto for night blindness. Today we know that liver oil is the major source of Vitamin A while other sources are butter, milk, cheese, egg yolk from animal, tomatoes, carrots, green vegetables like spinach, and sweet potatoes. A regular consumption of one glass of milk and one egg is sufficient for your daily body requirement.

Vitamin A promotes growth, improves resistance to bacterial infections and is necessary for vision and skin. Deficiency of Vitamin A causes night blindness, xerophthalmia (dryness of conjunctivae), Bitot Spot (opaque spots appear in conjunctiva), Keratinization of cornea, respiratory tract & urinary tract and skin become dry, scaly and rough.

The curative value of cod liver oil in rickets, was demonstrated in 1922 by Mc Collum and the possible relation of absence of sunlight to the occurrence of disease was suggested by Hess. Vitamin D or cholecaciferol is found in fish liver and is also produced in human skin by ultra violet light. Fish liver oil is the richest source egg yolk, margarine, butter and cheese also contain considerable amount of Vitamin D. It is not only children and adults but pregnant women and lactating mothers also require this vitamin daily for the development and growth of the foetus. The main target of Vitamin D are bones and teeth and to some extent kidney and the intestinal wall. They actually regulate the calcium and phosphate metabolism, involve in calcification (deposition of calcium salt on bones and teeth). Deficiency of Vitamin D causes rickets in children, osteomalacia in women and renal osteodystrophy (degenerative changes in kidney) which is rare.

Vitamin E or Tocopherol is the 'anti sterility' factor in rats but in human beings it is a controversial issue. Cotton seed oil, corn oil, sunflower oil, wheat germ oil and margarine are the richest sources while soya beans, cabbage, yeast lettuce, apple seeds and peanuts also contain Vitamin E, although in minute amounts.

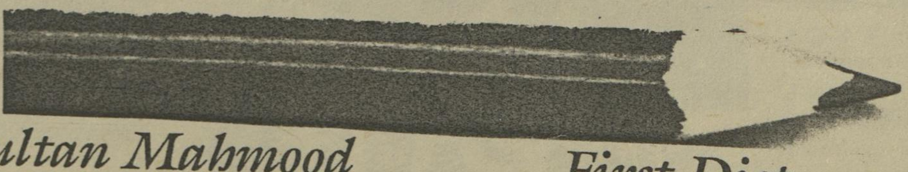
The most imperative property of Vitamin E is "anti oxidant " property which delays the process of ageing. Recently Vitamin E has been recommended in certain conditions like nocturnal muscle cramp, Intermittent claudication (pain, tension and weakness in legs on walking), Fibrocystic breast diseases and Atherosclerosis (deposition of lipids on blood vessels). Its deficiency causes muscular dystrophy (progressive weakness in pelvic and shoulder girdle) and hemolytic anaemia (destruction of red blood cells).

Vitamin K sometimes referred to as "Anti hemorrhagic vitamin" and "coagulation" vitamin is found chiefly in green leafy vegetables such as alfalfa, spinach, cauliflower, cabbage, soya beans and even tomatoes. In the gut of human beings certain friendly bacteria also synthesize Vitamin K. The main function of Vitamin K is the promotion of blood coagulation by helping in the process of coagulation cascade which prevent from bleeding by formation of blood clot. Deficiency causes profuse bleeding from minor injury rupture of minute blood vessels.

This acknowledgment is not enough and it can't portray the final state of knowledge. We must look forward to the result of the ongoing studies and researches in order to see where and to what extent the natural sources and supplement therapy of vitamins can be used to actually help to control the suffering of life threatening diseases.

It is imperative that we understand that while vitamins are negligible they are also a fantastic gift from God in help beings h in growth, development and reproduction. ■

> *'We must look forward to the result of the ongoing studies and researches in order to see where and to what extent the natural sources and supplement vitamin therapy can be used to actually help to control the suffering of life threatening diseases*



Dr. Sultan Mahmood
Ph.D (Nutrition), Poland; Post - Doc. Denmark

Cancer in Pakistan

Cancer in Pakistan is major health problem. Various factors which are causing cancer and their burden is on the increase are: a growing and ageing population, tobacco use and westernization diet.

Like all unhappy things, one does not bother about cancer and someone hear about a cancer patient, we shrug it off as we assume that it will never touch us and it's something that happens to only other people.

World over about 30 million people are affected by cancer. About 9 million people are newly diagnosed. The dilemma is that 50% of these belong to the developing world where only 5% of the total world resources are available. The 5-year survival rate for all cancers combined is about 60%. Worldwide lung and breast cancers are the leading causes of cancer related morbidity among men and women respectively.

It's useful to know some facts about cancer. The person, who has never heard about oncology or cancer, thinks it to be a new disease and others who happen to have been in touch by some men who feel that cancer is on the increase.

It is believed that man has been fighting cancer since it was first identified in Hippocrates time, 400 BC but it was not until 20th century that few cancer patient s had hope of its cure.

Due to ignorance, fear or shame many people do not seek medical advice but now with more awareness about cancer on the part of public, now cancer is more appropriately treated with better results.

Pakistan is an agro-based developing country. Until recent past 2% of the GNP was designated for health. Health insurance system neither exists nor is feasible in the country because of the level of education in this country. Like many other developing countries due to known reasons cancer is becoming a major health issue in this country as well. There is no population-based tumor registry in Pakistan, except in Karachi. Pakistan Medical Research Council has established tumor registry in various part of the country. Local cancer registry has been established in Lahore to determine the pattern of cancer in the Punjab province of Pakistan.

Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells in the body. Cancer remains the second leading cause of death world over. Primarily cancer has two etiologies. External factors like chemicals, radiation exposure or viruses and endogenous ones like hormones, immune conditions or inherited genetic mutations could cause it. The risk of cancer increases with increasing age, with tobacco abuse or with a positive family history of cancer.

Most cancers are either preventable or be detected earlier at a stage when a combined modality treatment could lead to a life long cure. Today specialties involved in cancer management include surgery, clinical oncology (Radiation oncology), Medical oncology and clinical hematology Early detection greatly enhances the effectiveness of cancer control and mainly surrounds around health education and cancer screening programmes.

The aim of cancer control is a reduction in both the incidence of the disease and associated morbidity and mortality. Its achievement requires not only sound knowledge of the disease process but also an understanding of the social and economic factors which govern now that knowledge can be put to effective use. The following are the four principal approaches to control:

Prevention means or eliminating exposure to carcinogenic agents, and includes reducing individual susceptibility to the effect of such agents. It is this approach that offers the greatest chance of successful long-term cancer control.

Increasing awareness of the signs and symptoms of cancer contributes to early detection of the disease. Where tests for cancer of specific sites are available, screening of apparently healthy individuals can disclose cancer in precursor or early stages, when treatment will be most effective.

Cancer treatment is becoming increasingly effective, with the result that survival times in certain types of cancer now exceed 5 years for more than half the patients in developed countries. However, 5-year survival rate is around 20% in many developing countries, partly because of the unavailability of treatment but also because of delays in seeking medical attention.

Palliative care is critical for most of the five million cancer patients in the world who die annually.

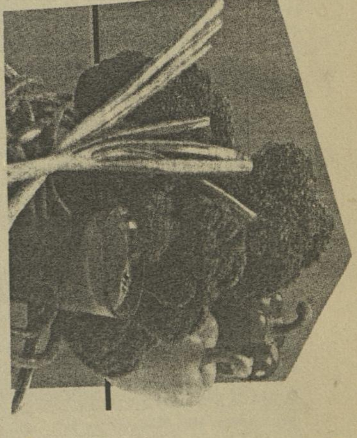
Awareness among the masses is the cornerstone in cancer prevention. Newer anti cancer drugs and latest equipment available can help fight cancer effectively. The notion "cancer ~ death" no longer is accepted and cancer treatment has become extremely safe.

1. Carcinoma esophagus is not uncommon in this part of the world, thus needs special attention for its treatment. Considering this fact the article under consideration seems to be important.

2. The author has presented his original work in an impressive manner, however a few changes have to be made in section of patients and methods, and results. (The changes have been pointed out on the article).

3. Results and inferences of the article are logical and significantly comparable with the results given in the international literature.

4. Language used by the author is easy and understandable. Citation of references is according to the standards. It is suggested that references for chemotherapy regimen and radiotherapy schedule should also be given to prove its validity.



Steps for quality food urged

EXPRESSING concern over food-borne illnesses that pose serious threat on the health and have grave economic consequences, participants of the third National Conference on Food Safety Saturday urged the government to take necessary steps to ensure food quality.

A bunch of national and international food experts and representatives of industry, including Mubashir Ansari, Jawad Rafiq Malik, Abrar Hasan, Prof Dr Rashida Ali, Dr Mustafa Kamal, Dr Naeemullah Naeem, Syed Tariq Naeem, Muhammad Aslam, Mazhar Siraj, Prema Chandra Athukorala and Satish Chand presented their papers on critical health related issues on a seminar 'Safe Food 2004' held at a local hotel.

Speaking on the occasion, experts opined that food systems and standards in Pakistan were old, unregulated and unorganised thus adversely affecting quality and safety of food supplies. They lamented that existing food laws, standards, procedures, testing infrastructures, nutrition and labeling methods were dreadfully primitive and ineffective.

Experts stated that restaurants and eateries lacked the typical infrastructure of establishment hygiene. "Pakistan's access to food export markets greatly depended on its capacity to meet the regulatory requirements of importing countries," they observed. Talking about genetically modified foods, experts noted that in spite of so many benefits described about GM foods, the public concern for human and environmental safety cannot just be ignored. "The food security demands that GM Foods should be labeled," they asserted. About bird flu scare, experts were of the opinion that deadly virus in Thailand was not detected in Pakistan, so there was no danger of this disease in the country.

"People in Pakistan are already under nourished and do not eat the minimum required protein so they not only should continue to eat chicken but also increase its intake to maintain proper health," they stressed.

BALANCED DIET, HEALTHY LIFE
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First Dietcare Centre
Under the Guidance of American Dietetic Association (ADA), USA
American Award ABI Laureate

FIRST DIETCARE CENTRE

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Veiling products

A slim looking gentleman with a brief case walked into the hospital's room where I see patients. He introduced himself by name, informed that he was from Slimfit Pharmaceuticals and wanted to introduce "just one product - Amino Fuel 900". The gentleman claimed that it was the best and the most economical treatment for malnourished children. To support the claim he presented a golden-colored brochure.

The brochure boasted "Old is Gold-Amino Fuel 900" in bold print with the statement "Thank You Dr., One million patients recovered with your valued prescription" on the one side accompanied by the so called "Detailed Information" on the other. He then brought out the "famous" samples (five sachets) of the product from his briefcase. After requesting for some "valued prescriptions", the gentleman left.

Not long ago the pharmaceutical companies used to observe some minimum standards in their promotional activities and practices. But, not anymore. The visit of the Slimfit representative was an ample evidence of these deteriorating standards.

The politics of creating malnutrition in the name of its treatment is ravaging the medical profession. People become malnourished because they have no money to buy food. This makes them weak and vulnerable to diseases which further compound the malnutrition.

Ironically the industry wants the poor people who are unable to buy food to consume expensive food supplements for months. The average per day cost of a food supplement per patient is Rs. 90 to 150. Naturally every rationally thinking clinician has a strong bias against these food supplements.

But let us keep this bias and the politics of malnutrition and supplements aside and concentrate on the promotional material that the company produced. Let us examine the promotional material by the Slimfit Pharmaceuticals.

The brochure states:

- Amino Fuel 900 provides balance combination of carbohydrates, proteins and fats.
- Amino Fuel 900 fulfills 100% RDA of vitamins and minerals.
- Amino Fuel 900 provides excellent combination of essential and non – essential Amino Acids.
- Amino Fuel 900 gives excellent coverage in incremental needs of underweight, Pregnancy, Surgery, Burn and Oncology.
- Amino Fuel 900 your confidence and first choice for last 12 years.
- Amino Fuel 900 holds economical flag for last 12 years.

However the brochure carries no details of the specifications of this product. It does not contain any written information about the contents of a box or a sachet and how much a glass or a cup of the solution made by using its powder would contain?

AMINO
FUEL
900

Merely stating that this product contains carbohydrates, proteins and fats along-with vitamins and minerals means nothing to a professional.

While writing a prescription, every physician thinks through the disease, its required medicine and the brand that he/she would prescribe. For typhoid, if one writes product 'X' 500 mg, one is sure that this specification is going to work in the patient. But in case of Amino Fuel, nobody can be confident about the product and its specifications.

How can I know this product is going to serve the required number of calories if I don't know the micronutrients? How can I be confident that the suspected deficiency of vitamin A will be treated by using this supplement when I don't know the vitamin A content of this product? Isn't it an irony that Amminofuel with this status of product information is in the market for last 12 years?

If we view the promotional brochure from the advertising point of view, even then there is lack of professional competency. There is an asterisk on three different sentences but no reference and explanation or substantiating evidence for it. Besides, there are many grammatical errors in the single-leaf brochure.

The only elaborate piece of information on this brochure is the comparative prices of Amino Fuel and few other products. An attempt has been made to prove that the product is the cheapest of them all. Here, it points out the company's priorities. They just want to lure the doctor and the consumer to this product because of its low cost. The prescriber and consumer need not know the contents' details. That is the message one gets from this promotional activity.

The samples:
The five sachets handed to me were of there different colors. None of the packets contains any information about how much powder they have and in what quantity are the ingredients.

See P: 44

From Page 41

One side of the packet reads:

- Amino Fuel 900
- High calorie nutritional supplement
- The most advanced Energizer

And the other side says:

- High energy advanced formula
- No drugs, no side effects
- Low in fats, contains essential amino acids vitamins
- Packed by Slimfit Pharmaceuticals Lahore, Pakistan

How the solution can be prepared by using the contents of this sachet is not written. It has been left to any body's imagination to use water, milk, tea, soda or anything.

If this sample is meant for apprising physicians with the contents and the mode of administration to transmit the "information" to patients, it is missing. Even this is not clear why the sachets are in three different colors? A guess is that these colors offer three different flavors; vanilla, chocolate and banana but this is only a guess. The packets do not have any such inscription.

This state of promotional materials for health professionals can be termed misleading and highly non-professional in the mildest of terms. Why the company is veiling the product information behind the price? Why the gentlemen insist on superiority of their product while they confess they don't know the details? Who is playing the fool?

These million dollar questions arise so many times while interacting with the medical representatives. It is high time the doctors stand up against unethical promotional activities by the pharmaceutical industry. This is in the best interest of not only the patients but the whole medical profession. ◆

Obesity: the disease of the millennium

The epidemic of obesity is constantly on the rise around the globe with around nearly half a billion people who are either overweight or obese. The main target should be prevention in order to avoid excess of weight. However, strategies have to be developed for those who are already affected by it.

Causes of this dilemma: Humans are designed to live in an environment of hard physical labour, and shortage of food and those best adapted to this were most likely to survive the challenges of life as life is certainly not a bed of roses. Now, the situation is different; urbanization, higher affluence & easier availability of high caloric food has contributed to this prevailing increase in obesity. The use of cars, computers and other such machineries has become very common with the progress in technology. Along with that intake of food has proliferated, the societies and people have become more vulnerable to the comforts of couch. Unplanned development is gobbling up the green space leaving behind highly polluted areas that have deprived people from parks and other such places to work out. Western sedentary lifestyle, its remote control, drive-thru and e-mail culture has influenced Asian behaviours, besides our eating habits.

Is wearing flab around your waist still in vogue?

Gone are the days when wearing flab around your waist was considered a sign of affluence. Today, living in the information age, we should be aware of what fat does to our bodies. It should be noted here too that overweight and obesity are on the rise from least to most developed countries. These usually result from excess calorie consumption and inadequate energy expenditure and put a person's health at risk.

Possible outcomes of obesity: Obesity leads to serious ailments like high blood pressure, arthritis, high cholesterol level, stroke, diabetes and even causing certain types of cancer. An important point to be noted here is that these ailments are no more rich country afflictions.

* **Cardiovascular disease (CVD):** In middle and older age groups, heavier weight is usually associated with CVD due to a stress on heart and muscles. CVD which accounts for 1 in 3 global deaths is expected to be the leading cause of death in developing countries by 2010.

* **Diabetes:** Statistics indicate that 12% per cent of people all above 25 years of age in Pakistan suffer from diabetes and 10% have impaired glucose tolerance (IGT). An article published in the International Diabetes Federation on "Diabetes in Pakistan" mentioned high prevalence of associated risk factors to the ailment in the country with obesity on top of the list.

* **Arthritis:** Women with obesity are four times more prone to the risk of Osteoarthritis as compared to non-obese women.

* **Infertility:** Obesity has also been found to affect the process of ovulation, response to fertility treatment, pregnancy rates and pregnancy outcome.

* **Urinary stress incontinence:** Involuntary loss of urine as well as urgency have also been observed in case of obesity.

* **Breast cancer:** Obese women have a higher risk of developing breast cancer after menopause, especially those who gain about 45 pounds or more after age 18 are twice as likely to develop breast cancer after menopause.

The REAL secret of weight loss: The main approach used for reducing weight is considered to be a calorie restricted diet & increased physical activity. But unfortunately an international survey conducted in 8 countries revealed that nearly half of the overweight and/ or obese respondents who have difficulty in controlling their weight give up on diet control and exercise programme within a month's time. Realizing this, recent weight management guidelines suggest that in such cases pharmacotherapy should be used along with diet control, increased physical activity and lifestyle modification for overcoming the problem of obesity.

Is losing weight harder than quitting smoking?

The list of the hardest things to do includes giving up smoking, saving money getting organized and losing weight among which the latter one is believed to be the greatest challenge for overnight and obese people mainly because of the commonly observed rebound phenomena, that is associated with the process of weight loss.

Benefits of losing 5-10% of weight: While the health risks associated with obesity are high, there are some ways to help reduce them. Among them, effecting a modest weight loss of 5- 10% has been shown to reduce the risks of obesity related disease and premature death.

Losing 5-10% of body weight is a real accomplishment when it comes to overall health gains. Physicians are on the front line of his unfolding health crisis. While managing patients with diabetes and hypertension physicians should urge the patients for a weight loss of 5-10% along with the management of these ailments.

Social implications: An obese person has to face various forms of social discriminations and prejudices. They face name calling and criticism which can result in loss of self-esteem, deep rooted insecurities and social withdrawal.

Many obese people feel shy in seeking advice or a treatment and even if they do go for a prescribed therapy; they don't feel like discussing it which if talked about can be beneficial for other people as well facing this predicament. However, this should not be ignored. Research-based medicines are available with the doctors in Pakistan now and should be taken as a remedial measure in order to get rid of this quandary.

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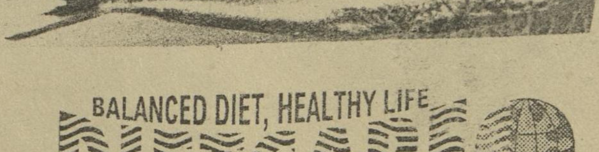

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About the Chief Editor

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Dr. Sultan Mahmood is considered by many life-science scientists to be one of the foremost contributor of human nutrition knowledge to the general public as well as the medical circles of Pakistan. His work requires reading regarding the training of medical professionals. He has also spoken before numerous elite forums as a resource person across the country and abroad, viz., Pakistan Academy of Family Physicians (PAFP), College of Physicians and Surgeons Pakistan (CPSP), Qarshi and Hamdard Industries, Institute of Public Health (IPH), Diabetic Institute Pakistan (DIP), FAO, WHO, Asian Development Bank, European Association of Animal Production (EAAP), International Atomic Energy Agency (IAEA); and a number of prestigious universities situated at Faisalabad, Lahore, Warsaw, Wagningen, Berlin, Copenhagen, Budapest, Prague, California and New York, etc.

He started his career as private consultant in 1981 as animal nutritionist and later on served the public sector mostly from Lahore after receiving B.Sc. (honors) degree from University of Agriculture, Faisalabad. He continued his services in the same capacity in Punjab government, FAO/UNDP, IUCN, GTZ, foreign funded NGOs, Asian Development Bank, and Warsaw Agric. University, Poland till 1997, during which he earned his M. Sc. (Honors) in Nutrition from Pakistan, PhD in Nutrition from Poland and Post-Doctorate in Food Security from Denmark and USA.

Being cordially accepted and invited by the medical circles of Pakistan due to his literature and training contributions to human sector, he changed career partially in 1997 and started participating as a private Nutrition Consultant (and Dietitian) after a certification from the Institute of Public Health, Government of the Punjab. He strengthened his skills in human nutrition by affiliating with Diabetic's Institute Pakistan (DIP), Diabetic's Association of Pakistan (DAP) and Bashir Medical Complex. He laid the foundation of an innovative 'First Dietcare Research Centre (FDRC)' at Lahore and practiced as nutritionist where published regularly the monthly FDRC Bulletin to supply dietary and nutrition information to family physicians. Due to his deep interest and R&D contributions in human nutrition, elite American universities invited him for further Post-Doctoral studies which he completed in 2000-2001 in California Oklahoma and New York. Anyhow, despite all his efforts in human nutrition he is still serving public in different private sectors as consultant where another major diversion was taken in 2004 towards the new area of food security (a combination of Food and Environment). Currently, he is Managing Director of Ecocare Consultancy Services (ECCS) Pvt. Ltd. which is an efficient company catering all disciplines of his expertise.

Record of research publications and development of Dr. Sultan Mahmood is marvelous and he has produced over 600 manuscripts including 11 books, where more than half of them relates to human nutrition. Other categories of literature contributions are chapters of medical books, international research papers, abstracts, popular technical and newspaper articles, regular monthly medical bulletin, dissertations, booklets, training curricula, R&D reports, leaflets/ display charts and PC-1s. Fifty three of them have international worth.